CONCEPTUAL HYDROLOGY STUDY

FOR

Casa Loma Apartments

SEC East Lugonia Avenue & Occidental Drive

Redlands, CA 92374

Prepared for Owner/Developer:

Dynamic Redlands, LLC

2780 Cabot Drive, Suite 140

Corona, CA 92883

Prepared By:

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Lawrence M. Gates RCE 45715 Exp. 12-31-18

2018-03-19

DRC Job No. 17-545

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Introduction

A preliminary drainage analysis has been prepared for the Residence at Casa Loma project located in the City of Redlands, California. The project site is located on the south of Lugonia Avenue, between Occidental Drive and University Street. The project site encompasses approximately 5.74 acres.

Discussion

The west portion of the project site is currently an unfinished subdivision with a single cul-de-sac road and graded pads as well as some vacant land on the northwest. The east portion of the project site is currently three low density residential units. The proposed project is an apartment complex with associated parking and landscape areas.

In the existing condition, storm flows are generally tributary to two existing catch basins in the cul-de-sac road that are connected and discharge to a low area south of the road, adjacent to Occidental Drive. There are no existing public drainage facilities located near the project site.

In the proposed condition, a majority of the storm flows developed onsite will be collected into a storm drain and delivered to an underground storage system. The underground storage system will be designed to both percolate the required water quality volume and reduce the project site discharge to no more than the existing condition level. The underground storage system discharges to Occidental Drive.

In addition to the storm flows that are collected into the underground storage system, there is drainage from the areas adjacent to both Occidental Drive and University Street that sheet flow to each street.

Hydrologic Analysis

The hydrologic analysis was completed in accordance with the 1986 San Bernardino County Hydrology Manual and 2010 Hydrology Manual Addendum. Both rational method and flood hydrograph analyses have been completed. The rational method analyses were used to develop the allowable discharge from the project site as well as the time-of-concentration for the flood hydrograph analyses. The flood hydrograph analyses were used to analyze the underground storage system. The hydrologic analyses were completed for the 10-, 25-, and 100-year return events. Advanced Engineering Software (AES) software programs were used to prepare the hydrologic analyses.

The project site is situated within hydrologic soil type "A" as identified in the Hydrology Manual. In the existing condition, there is a mix of low density residential and bare ground. For the hydrologic analysis of the existing condition, the actual impervious percentages were calculated and used in the analysis. For the proposed condition, an "Apartments" land use type has been assumed for the hydrologic analyses. The Hydrology Manual Addendum requires the use of NOAA Atlas 14 rainfall values when completing hydrologic analyses.

Due to the relatively small size of the drainage subareas in the proposed condition, a conservative 5-minute time-of-concentration has been assumed for the drainage subareas in the rational method hydrologic analysis.

The rational method hydrologic analysis for the existing condition is contained in Technical Appendix A.

The rational method hydrologic analysis for the proposed condition is contained in Technical Appendix B.

The flood hydrograph hydrologic analysis for the proposed condition is contained in Technical Appendix C.

Undergro und Storage Analysis

An analysis of the proposed underground storage system was completed. The analysis of the underground storage system was completed for the 10-, 25, and 100-year design storms. The underground storage analysis was completed using the U.S. Army Corps of Engineers HEC-1 software program.

The proposed underground storage systems are designed to both percolate the required water quality volume and reduce the project site discharge to no more than the existing condition level. The Contech underground storage system includes both corrugated metal pipe (CMP) chambers and a stone surround that has 40% voids. Based on the percolation tests performed at the site, the soil engineer has indicated that a percolation rate of 7.00 in/hr may be used for design. A factor of safety of 3 has been applied and as such, a percolation rate of 2.33 in/hr is used in the evaluation of the underground storage system.

The underground storage system has been designed so that there is no discharge until the required water quality volume has been achieved. Storm flows continue to fill the underground storage until they reach the invert elevation of the proposed discharge orifice openings. The openings have been placed relatively high in the underground storage system so as to reduce the discharge to the existing condition level. The maximum stage in the underground storage system is designed to be below the soffit of the chambers that make up the system.

The underground storage analysis is contained in Technic al Appendix D.

Summary

A summary of the rational method existing condition flow rates is as follows:

Node Number ()	Drainage Area (ac)	10-year Discharge (cfs)	25-year Discharge (cfs)	100-year Discharge (cfs)
101	3.24	2.16	3.19	5.43
111	2.50	1.92	2.74	4.48
Total	5.74	4.08	5.93	9.91

A summary of the unmitigated rational method proposed condition flow rates is as follows:

Node Number ()	Drainage Area (ac)	10-year Discharge (cfs)	25-year Discharge (cfs)	100-year Discharge (cfs)
1123	5.25	9.75	12.21	16.35
2001	0.22	0.44	0.55	0.73
3001	0.27	0.54	0.68	0.90
Total	5.74	10.73	13.44	17.98

Storm flows at Node 1123 are tributary to the underground storage system. Storm flows at Node 2001 discharge to Occidental Drive and Storm flows at Node 3001 discharge to University Street

A summary of the underground storage analyses is as follows:

Return Event (yr)	Area (ac)	Maximum Inflow (cfs)	Maximum Stage (ft)	Maximum Storage (cu ft)	Total Discharge (cfs)	Percolation (cfs)	Outlet (cfs)
10	5.25	15.47	26.63	14,810	1.10	0.31	0.79
25	5.25	11.18	27.30	17,424	4.40	0.31	4.09
100	5.25	8.86	28.21	20,909	6.80	0.31	6.49

A summary of the mitigated proposed condition flow rates is as follows:

Node Number ()	Drainage Area (ac)	10-year Discharge (cfs)	25-year Discharge (cfs)	100-year Discharge (cfs)
1123	5.25	0.79	4.09	6.49
2001	0.22	0.44	0.55	0.73
3001	0.27	0.54	0.68	0.90
Total	5.74	1.77	5.32	8.12

Therefore, the proposed underground storage system reduces the site discharge to below the existing condition level.

NOAA Atlas 14, Volume 6, Version 2
Location name: Redlands, California, USA*
Latitude: 34.0686°, Longitude: -117.1683°
Elevation: 1435.82 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.101 (0.084-0.122)	0.130 (0.108-0.158)	0.169 (0.140-0.207)	0.202 (0.166-0.249)	0.248 (0.197-0.316)	0.284 (0.221-0.370)	0.322 (0.244-0.429)	0.362 (0.267-0.496)	0.418 (0.295-0.598)	0.463 (0.315-0.686)
10-min	0.144 (0.120-0.175)	0.186 (0.155-0.227)	0.243 (0.201-0.296)	0.290 (0.238-0.356)	0.356 (0.283-0.452)	0.408 (0.317-0.530)	0.462 (0.350-0.615)	0.519 (0.382-0.712)	0.599 (0.423-0.857)	0.663 (0.452-0.983)
15-min	0.175 (0.145-0.212)	0.225 (0.187-0.274)	0.294 (0.243-0.358)	0.351 (0.288-0.431)	0.430 (0.342-0.547)	0.493 (0.383-0.641)	0.558 (0.423-0.744)	0.628 (0.462-0.861)	0.724 (0.511-1.04)	0.802 (0.547-1.19)
30-min	0.259 (0.215-0.314)	0.334 (0.278-0.406)	0.435 (0.361-0.530)	0.519 (0.427-0.638)	0.637 (0.506-0.810)	0.730 (0.568-0.949)	0.827 (0.627-1.10)	0.930 (0.685-1.27)	1.07 (0.757-1.54)	1.19 (0.810-1.76)
60-min	0.371 (0.309-0.450)	0.479 (0.398-0.582)	0.624 (0.517-0.760)	0.745 (0.612-0.915)	0.913 (0.725-1.16)	1.05 (0.814-1.36)	1.19 (0.899-1.58)	1.33 (0.982-1.83)	1.54 (1.09-2.20)	1.70 (1.16-2.52)
2-hr	0.526 (0.438-0.639)	0.675 (0.561-0.821)	0.874 (0.725-1.07)	1.04 (0.854-1.28)	1.27 (1.01-1.61)	1.45 (1.13-1.88)	1.63 (1.24-2.17)	1.83 (1.35-2.51)	2.10 (1.48-3.00)	2.31 (1.57-3.42)
3-hr	0.645 (0.537-0.783)	0.826 (0.687-1.00)	1.07 (0.884-1.30)	1.27 (1.04-1.56)	1.54 (1.22-1.96)	1.76 (1.36-2.28)	1.98 (1.50-2.63)	2.21 (1.63-3.03)	2.52 (1.78-3.61)	2.78 (1.89-4.11)
6-hr	0.902 (0.751-1.10)	1.15 (0.959-1.40)	1.49 (1.23-1.81)	1.76 (1.45-2.16)	2.13 (1.70-2.72)	2.43 (1.89-3.15)	2.72 (2.07-3.63)	3.03 (2.23-4.16)	3.46 (2.44-4.94)	3.79 (2.58-5.61)
12-hr	1.21 (1.01-1.47)	1.55 (1.29-1.89)	2.00 (1.66-2.44)	2.37 (1.95-2.91)	2.87 (2.28-3.65)	3.25 (2.53-4.22)	3.64 (2.76-4.85)	4.04 (2.98-5.54)	4.59 (3.24-6.56)	5.01 (3.42-7.43)
24-hr	1.63 (1.44-1.88)	2.10 (1.86-2.42)	2.72 (2.40-3.14)	3.22 (2.82-3.75)	3.89 (3.30-4.69)	4.41 (3.66-5.42)	4.93 (4.00-6.22)	5.47 (4.31-7.08)	6.20 (4.69-8.35)	6.76 (4.94-9.42)
2-day	2.01 (1.78-2.32)	2.63 (2.33-3.03)	3.44 (3.04-3.98)	4.11 (3.60-4.79)	5.02 (4.25-6.05)	5.72 (4.75-7.04)	6.44 (5.21-8.11)	7.18 (5.66-9.29)	8.18 (6.19-11.0)	8.96 (6.56-12.5)
3-day	2.17 (1.92-2.50)	2.88 (2.55-3.32)	3.82 (3.37-4.42)	4.61 (4.03-5.37)	5.69 (4.82-6.85)	6.54 (5.43-8.04)	7.41 (6.01-9.34)	8.33 (6.56-10.8)	9.59 (7.26-12.9)	10.6 (7.75-14.8)
4-day	2.34 (2.08-2.70)	3.13 (2.77-3.62)	4.20 (3.70-4.85)	5.08 (4.45-5.93)	6.32 (5.35-7.61)	7.29 (6.05-8.96)	8.30 (6.73-10.5)	9.36 (7.38-12.1)	10.8 (8.21-14.6)	12.0 (8.80-16.8)
7-day	2.72 (2.41-3.13)	3.66 (3.23-4.22)	4.92 (4.34-5.69)	5.97 (5.22-6.96)	7.44 (6.30-8.96)	8.60 (7.14-10.6)	9.81 (7.95-12.4)	11.1 (8.73-14.3)	12.8 (9.72-17.3)	14.3 (10.4-19.9)
10-day	2.94 (2.60-3.39)	3.97 (3.51-4.58)	5.36 (4.73-6.20)	6.52 (5.71-7.61)	8.14 (6.90-9.81)	9.43 (7.82-11.6)	10.8 (8.72-13.6)	12.2 (9.59-15.7)	14.1 (10.7-19.0)	15.7 (11.5-21.9)
20-day	3.65 (3.23-4.21)	4.97 (4.39-5.73)	6.75 (5.95-7.81)	8.24 (7.21-9.61)	10.3 (8.75-12.4)	12.0 (9.95-14.7)	13.7 (11.1-17.3)	15.6 (12.3-20.1)	18.1 (13.7-24.4)	20.2 (14.8-28.1)
30-day	4.30 (3.81-4.96)	5.87 (5.19-6.77)	8.00 (7.05-9.25)	9.78 (8.56-11.4)	12.3 (10.4-14.8)	14.3 (11.9-17.6)	16.4 (13.3-20.6)	18.6 (14.7-24.1)	21.7 (16.4-29.2)	24.2 (17.7-33.7)
45-day	5.15 (4.56-5.93)	7.02 (6.21-8.10)	9.56 (8.43-11.1)	11.7 (10.2-13.6)	14.7 (12.5-17.7)	17.1 (14.2-21.0)	19.6 (15.9-24.7)	22.3 (17.6-28.9)	26.0 (19.7-35.1)	29.1 (21.3-40.5)
60-day	6.03 (5.34-6.95)	8.20 (7.25-9.46)	11.1 (9.82-12.9)	13.6 (11.9-15.9)	17.1 (14.5-20.6)	19.9 (16.5-24.5)	22.8 (18.5-28.7)	25.9 (20.4-33.5)	30.3 (22.9-40.8)	33.8 (24.7-47.1)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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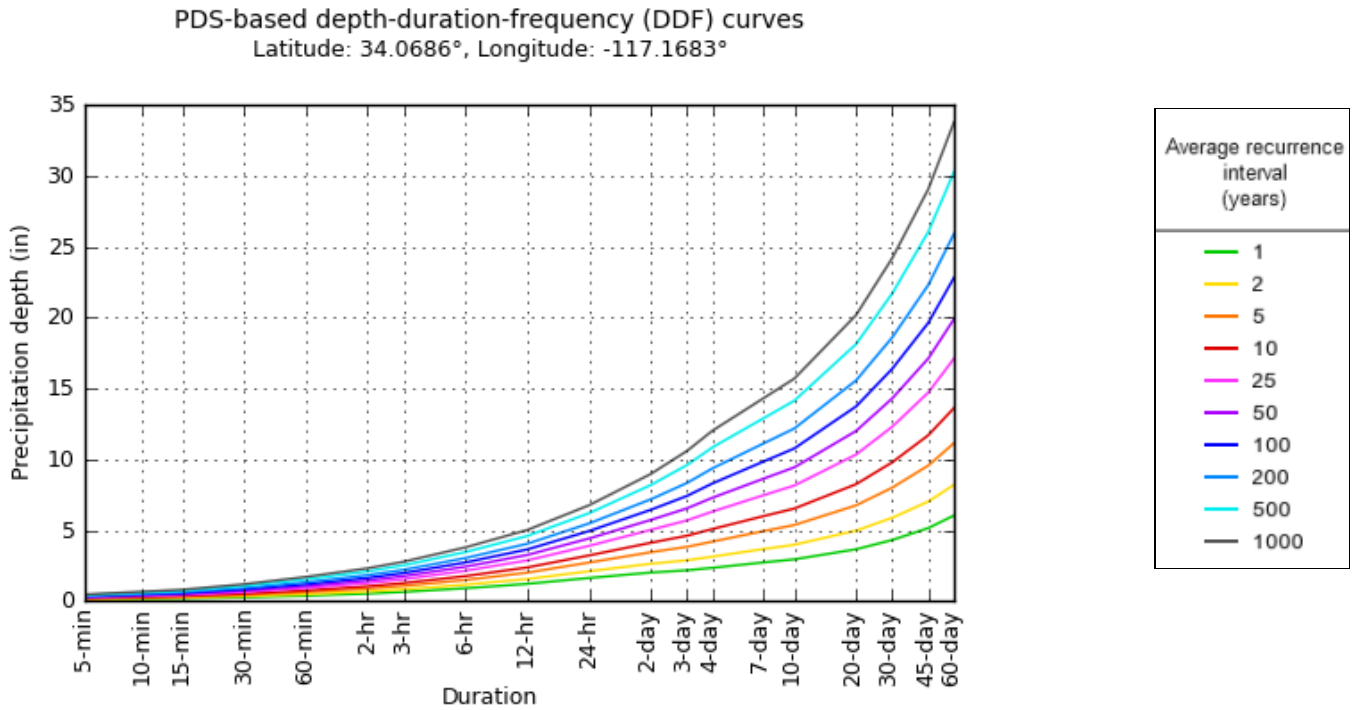
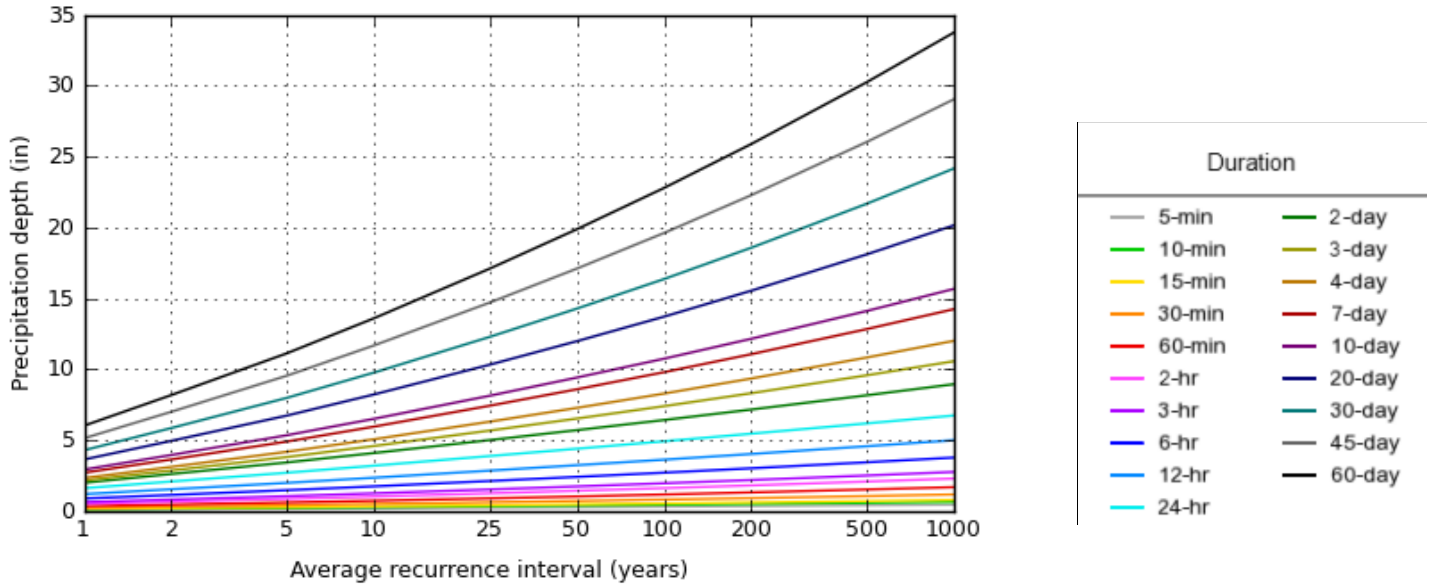
PF graphical





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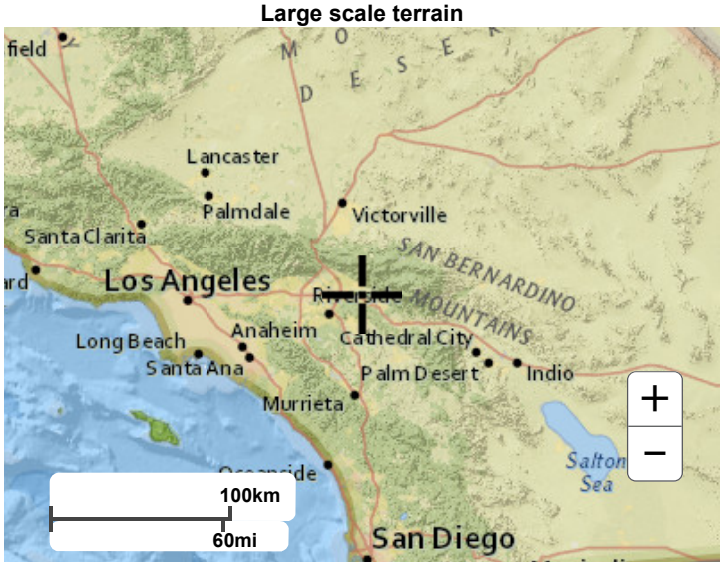
Maps & aerials

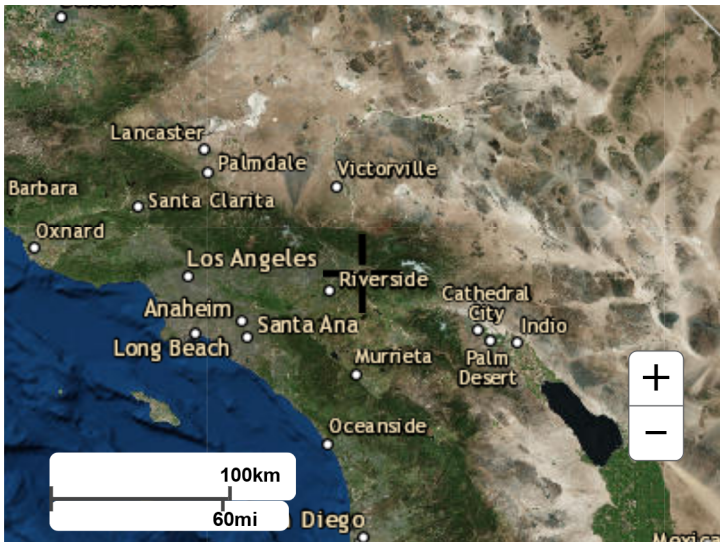
Small scale terrain

Large scale terrain



Large scale map

Large scale aerial



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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Technical Appendix A

Hydrologic Analysis
Existing Condition – Rational Method

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             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
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             Ver. 8.0  Release Date: 01/01/2003  License ID 1510

                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 ************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AT CASA LOMA - REDLANDS                                        *
* EXISTING CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 10-YEAR                                            *
 ****************************************************************************

  FILE NAME: 1803E010.DAT
  TIME/DATE OF STUDY: 12:00 03/10/2018
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  5
   1)   5.000;  2.424
   2)  10.000;  1.740
   3)  15.000;  1.404
   4)  30.000;  1.038
   5)  60.000;  0.745
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   681.00
  ELEVATION DATA: UPSTREAM(FEET) =   1442.20  DOWNSTREAM(FEET) =   1426.20

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.605
```

```
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  1.565
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  USER-DEFINED               -        3.24      0.97      0.85     -   12.60
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.85
  SUBAREA RUNOFF(CFS) =      2.16
  TOTAL AREA(ACRES) =      3.24   PEAK FLOW RATE(CFS) =      2.16

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    101.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   621.00
  ELEVATION DATA: UPSTREAM(FEET) =   1442.80  DOWNSTREAM(FEET) =   1426.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   11.810
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  1.618
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  USER-DEFINED               -        2.50      0.97      0.79     -   11.81
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.79
  SUBAREA RUNOFF(CFS) =      1.92
  TOTAL AREA(ACRES) =      2.50   PEAK FLOW RATE(CFS) =      1.92

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    111.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      0.01  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.01  AREA-AVERAGED Fm(INCH/HR)=  0.00
  AREA-AVERAGED Fp(INCH/HR) =  0.00  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)   =      1.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
         (c) Copyright 1983-2003 Advanced Engineering Software (aes)
             Ver. 8.0  Release Date: 01/01/2003  License ID 1510

                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 ************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AT CASA LOMA - REDLANDS                                        *
* EXISTING CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 25-YEAR                                            *
 ****************************************************************************

  FILE NAME: 1803E025.DAT
  TIME/DATE OF STUDY: 12:00 03/10/2018
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  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   25.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  5
   1)   5.000;  2.976
   2)  10.000;  2.136
   3)  15.000;  1.720
   4)  30.000;  1.274
   5)  60.000;  0.913
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   681.00
  ELEVATION DATA: UPSTREAM(FEET) =   1442.20  DOWNSTREAM(FEET) =   1426.20

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.605
```

```
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.919
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  USER-DEFINED               -        3.24      0.97      0.85     -   12.60
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.85
  SUBAREA RUNOFF(CFS) =      3.19
  TOTAL AREA(ACRES) =      3.24   PEAK FLOW RATE(CFS) =      3.19

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    101.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   621.00
  ELEVATION DATA: UPSTREAM(FEET) =   1442.80  DOWNSTREAM(FEET) =   1426.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   11.810
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.985
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  USER-DEFINED               -        2.50      0.97      0.79     -   11.81
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.79
  SUBAREA RUNOFF(CFS) =      2.74
  TOTAL AREA(ACRES) =      2.50   PEAK FLOW RATE(CFS) =      2.74

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    111.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      0.01  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.01  AREA-AVERAGED Fm(INCH/HR)=  0.00
  AREA-AVERAGED Fp(INCH/HR) =  0.00  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)   =      1.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
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                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 ************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AT CASA LOMA - REDLANDS                                        *
* EXISTING CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 100-YEAR                                           *
 ****************************************************************************

  FILE NAME: 1803E100.DAT
  TIME/DATE OF STUDY: 12:00 03/10/2018
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  5
   1)   5.000;  3.864
   2)  10.000;  2.772
   3)  15.000;  2.232
   4)  30.000;  1.654
   5)  60.000;  1.190
  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   681.00
  ELEVATION DATA: UPSTREAM(FEET) =   1442.20  DOWNSTREAM(FEET) =   1426.20

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.605
```

```
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.491
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  USER-DEFINED               -        3.24      0.74      0.85     -   12.60
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.85
  SUBAREA RUNOFF(CFS) =      5.43
  TOTAL AREA(ACRES) =      3.24   PEAK FLOW RATE(CFS) =      5.43

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    101.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   621.00
  ELEVATION DATA: UPSTREAM(FEET) =   1442.80  DOWNSTREAM(FEET) =   1426.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   11.810
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.576
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  USER-DEFINED               -        2.50      0.74      0.79     -   11.81
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.79
  SUBAREA RUNOFF(CFS) =      4.48
  TOTAL AREA(ACRES) =      2.50   PEAK FLOW RATE(CFS) =      4.48

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    111.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      0.01  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.01  AREA-AVERAGED Fm(INCH/HR)=  0.00
  AREA-AVERAGED Fp(INCH/HR) =  0.00  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)   =      1.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

Technical Appendix B

Hydrologic Analysis
Proposed Condition – Rational Method

```
****************************************************************************
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                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 ************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AT CASA LOMA - REDLANDS                                        *
* PROPOSED CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 10-YEAR                                            *
 ****************************************************************************

  FILE NAME: 1803P010.DAT
  TIME/DATE OF STUDY: 16:00 03/14/2018
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  5
   1)   5.000;  2.424
   2)  10.000;  1.740
   3)  15.000;  1.404
   4)  30.000;  1.038
   5)  60.000;  0.745
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
```

```
  APARTMENTS                  A        0.01      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.02
  TOTAL AREA(ACRES) =      0.01   PEAK FLOW RATE(CFS) =      0.02

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1012.00 IS CODE =  31
----------------------------------------------------------------------------
  ** WARNING: Computed Flowrate is less than 0.1 cfs,
               Routing Algorithm is UNAVAILABLE.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1012.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.00
  RAINFALL INTENSITY(INCH/HR) =   2.42
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.01
  TOTAL STREAM AREA(ACRES) =     0.01
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.02

****************************************************************************
  FLOW PROCESS FROM NODE   1011.00 TO NODE   1011.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                  A        0.35      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.70
  TOTAL AREA(ACRES) =      0.35   PEAK FLOW RATE(CFS) =      0.70

****************************************************************************
  FLOW PROCESS FROM NODE   1011.00 TO NODE   1012.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.58  DOWNSTREAM(FEET) =    30.80
  FLOW LENGTH(FEET) =    15.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.10
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.70
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   5.04
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1012.00 =    92.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1012.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.04
  RAINFALL INTENSITY(INCH/HR) =   2.42
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.35
  TOTAL STREAM AREA(ACRES) =     0.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.70

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.02   5.00    2.424  0.97( 0.20) 0.20     0.0    1001.00
      2      0.70   5.04    2.418  0.98( 0.20) 0.20     0.3    1011.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.72   5.00    2.424  0.97( 0.19) 0.20     0.4    1001.00
      2      0.72   5.04    2.418  0.98( 0.20) 0.20     0.4    1011.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      0.72    Tc(MIN.) =     5.04
  EFFECTIVE AREA(ACRES) =     0.36   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.36
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1012.00 =    92.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1073.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    30.80  DOWNSTREAM(FEET) =    26.18
  FLOW LENGTH(FEET) =    93.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.04
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.72
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =   5.30
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1073.00 =   185.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1021.00 TO NODE   1021.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
```

```
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.14      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.14   PEAK FLOW RATE(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE   1021.00 TO NODE   1031.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    32.50  DOWNSTREAM(FEET) =    31.70
  FLOW LENGTH(FEET) =    80.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.63
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.28
  PIPE TRAVEL TIME(MIN.) =   0.51    Tc(MIN.) =   5.51
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1031.00 =   173.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.51
  RAINFALL INTENSITY(INCH/HR) =   2.35
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.14
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.14      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.14   PEAK FLOW RATE(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
```

```
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.00
  RAINFALL INTENSITY(INCH/HR) =   2.42
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.14
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.28

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.28   5.51    2.355  0.98( 0.20) 0.20     0.1    1021.00
      2      0.28   5.00    2.424  0.98( 0.20) 0.20     0.1    1031.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.54   5.00    2.424  0.98( 0.20) 0.20     0.3    1031.00
      2      0.55   5.51    2.355  0.98( 0.20) 0.20     0.3    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      0.55    Tc(MIN.) =     5.51
  EFFECTIVE AREA(ACRES) =     0.28   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.28
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1031.00 =   173.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1042.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.70  DOWNSTREAM(FEET) =    28.30
  FLOW LENGTH(FEET) =   190.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.88
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.55
  PIPE TRAVEL TIME(MIN.) =   0.82    Tc(MIN.) =   6.32
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1042.00 =   363.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1042.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.32
  RAINFALL INTENSITY(INCH/HR) =   2.24
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.28
  TOTAL STREAM AREA(ACRES) =     0.28
```

```
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.55

****************************************************************************
  FLOW PROCESS FROM NODE   1041.00 TO NODE   1041.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   190.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.49      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.98
  TOTAL AREA(ACRES) =      0.49   PEAK FLOW RATE(CFS) =      0.98

****************************************************************************
  FLOW PROCESS FROM NODE   1041.00 TO NODE   1042.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.08  DOWNSTREAM(FEET) =    28.30
  FLOW LENGTH(FEET) =    14.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.82
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.98
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   5.02
  LONGEST FLOWPATH FROM NODE   1041.00 TO NODE   1042.00 =   204.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1042.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.02
  RAINFALL INTENSITY(INCH/HR) =   2.42
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.49
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.98

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.54   5.81    2.313  0.98( 0.20) 0.20     0.3    1031.00
      1      0.55   6.32    2.243  0.98( 0.20) 0.20     0.3    1021.00
      2      0.98   5.02    2.421  0.98( 0.20) 0.20     0.5    1041.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
```

```
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.48   5.02    2.421  0.98( 0.20) 0.20     0.7    1041.00
      2      1.48   5.81    2.313  0.98( 0.20) 0.20     0.8    1031.00
      3      1.46   6.32    2.243  0.98( 0.20) 0.20     0.8    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      1.48    Tc(MIN.) =     5.81
  EFFECTIVE AREA(ACRES) =     0.76   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.77
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1042.00 =   363.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1052.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    28.30  DOWNSTREAM(FEET) =    27.52
  FLOW LENGTH(FEET) =   167.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.12
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.48
  PIPE TRAVEL TIME(MIN.) =   0.89    Tc(MIN.) =   6.70
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1052.00 =   530.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1052.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.70
  RAINFALL INTENSITY(INCH/HR) =   2.19
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.76
  TOTAL STREAM AREA(ACRES) =     0.77
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.48

****************************************************************************
  FLOW PROCESS FROM NODE   1051.00 TO NODE   1051.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   167.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.59      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.18
  TOTAL AREA(ACRES) =      0.59   PEAK FLOW RATE(CFS) =      1.18

****************************************************************************
  FLOW PROCESS FROM NODE   1051.00 TO NODE   1052.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    29.24  DOWNSTREAM(FEET) =    27.52
  FLOW LENGTH(FEET) =   177.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.88
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.18
  PIPE TRAVEL TIME(MIN.) =   0.76    Tc(MIN.) =   5.76
  LONGEST FLOWPATH FROM NODE   1051.00 TO NODE   1052.00 =   344.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1052.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.76
  RAINFALL INTENSITY(INCH/HR) =   2.32
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.59
  TOTAL STREAM AREA(ACRES) =     0.59
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.18

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.48   5.91    2.299  0.98( 0.20) 0.20     0.7    1041.00
      1      1.48   6.70    2.191  0.98( 0.20) 0.20     0.8    1031.00
      1      1.46   7.22    2.121  0.98( 0.20) 0.20     0.8    1021.00
      2      1.18   5.76    2.320  0.98( 0.20) 0.20     0.6    1051.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      2.64   5.76    2.320  0.98( 0.20) 0.20     1.3    1051.00
      2      2.65   5.91    2.299  0.98( 0.20) 0.20     1.3    1041.00
      3      2.59   6.70    2.191  0.98( 0.20) 0.20     1.3    1031.00
      4      2.53   7.22    2.121  0.98( 0.20) 0.20     1.4    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      2.65    Tc(MIN.) =     5.91
  EFFECTIVE AREA(ACRES) =     1.31   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.36
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1052.00 =   530.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1062.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.32  DOWNSTREAM(FEET) =    26.74
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.70
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      2.65
  PIPE TRAVEL TIME(MIN.) =   0.53    Tc(MIN.) =   6.44
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1062.00 =   647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1062.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.44
  RAINFALL INTENSITY(INCH/HR) =   2.23
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     1.31
  TOTAL STREAM AREA(ACRES) =     1.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.65

****************************************************************************
  FLOW PROCESS FROM NODE   1061.00 TO NODE   1061.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   166.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.46      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.92
  TOTAL AREA(ACRES) =      0.46   PEAK FLOW RATE(CFS) =      0.92

****************************************************************************
  FLOW PROCESS FROM NODE   1061.00 TO NODE   1062.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.07  DOWNSTREAM(FEET) =    26.74
  FLOW LENGTH(FEET) =    66.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.85
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.92
  PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =   5.39
  LONGEST FLOWPATH FROM NODE   1061.00 TO NODE   1062.00 =   232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1062.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.39
  RAINFALL INTENSITY(INCH/HR) =   2.37
```

```
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.46
  TOTAL STREAM AREA(ACRES) =     0.46
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.92

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      2.64   6.29    2.248  0.98( 0.20) 0.20     1.3    1051.00
      1      2.65   6.44    2.227  0.98( 0.20) 0.20     1.3    1041.00
      1      2.59   7.23    2.119  0.98( 0.20) 0.20     1.3    1031.00
      1      2.53   7.75    2.048  0.98( 0.20) 0.20     1.4    1021.00
      2      0.92   5.39    2.371  0.98( 0.20) 0.20     0.5    1061.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.32   5.39    2.371  0.98( 0.20) 0.20     1.6    1061.00
      2      3.51   6.29    2.248  0.98( 0.20) 0.20     1.8    1051.00
      3      3.51   6.44    2.227  0.98( 0.20) 0.20     1.8    1041.00
      4      3.41   7.23    2.119  0.98( 0.20) 0.20     1.8    1031.00
      5      3.32   7.75    2.048  0.98( 0.20) 0.20     1.8    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      3.51    Tc(MIN.) =     6.44
  EFFECTIVE AREA(ACRES) =     1.77   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.82
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1062.00 =   647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1072.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.74  DOWNSTREAM(FEET) =    26.59
  FLOW LENGTH(FEET) =    31.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.88
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      3.51
  PIPE TRAVEL TIME(MIN.) =   0.13    Tc(MIN.) =   6.57
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1072.00 =   678.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1072.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.57
  RAINFALL INTENSITY(INCH/HR) =   2.21
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     1.77
  TOTAL STREAM AREA(ACRES) =     1.82
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.51
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1071.00 TO NODE   1071.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    31.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.31      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.62
  TOTAL AREA(ACRES) =      0.31   PEAK FLOW RATE(CFS) =      0.62

****************************************************************************
  FLOW PROCESS FROM NODE   1071.00 TO NODE   1072.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.71  DOWNSTREAM(FEET) =    26.59
  FLOW LENGTH(FEET) =    23.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.59
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.62
  PIPE TRAVEL TIME(MIN.) =   0.15    Tc(MIN.) =   5.15
  LONGEST FLOWPATH FROM NODE   1071.00 TO NODE   1072.00 =    54.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1072.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.15
  RAINFALL INTENSITY(INCH/HR) =   2.40
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.31
  TOTAL STREAM AREA(ACRES) =     0.31
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.62

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.32   5.52    2.353  0.98( 0.20) 0.20     1.6    1061.00
      1      3.51   6.42    2.230  0.98( 0.20) 0.20     1.8    1051.00
      1      3.51   6.57    2.209  0.98( 0.20) 0.20     1.8    1041.00
      1      3.41   7.37    2.100  0.98( 0.20) 0.20     1.8    1031.00
      1      3.32   7.89    2.029  0.98( 0.20) 0.20     1.8    1021.00
      2      0.62   5.15    2.404  0.98( 0.20) 0.20     0.3    1071.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.
```

```
  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.79   5.15    2.404  0.98( 0.20) 0.20     1.8    1071.00
      2      3.92   5.52    2.353  0.98( 0.20) 0.20     1.9    1061.00
      3      4.08   6.42    2.230  0.98( 0.20) 0.20     2.1    1051.00
      4      4.08   6.57    2.209  0.98( 0.20) 0.20     2.1    1041.00
      5      3.94   7.37    2.100  0.98( 0.20) 0.20     2.1    1031.00
      6      3.83   7.89    2.029  0.98( 0.20) 0.20     2.1    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      4.08    Tc(MIN.) =     6.42
  EFFECTIVE AREA(ACRES) =     2.06   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      2.13
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1072.00 =   678.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1073.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.59  DOWNSTREAM(FEET) =    26.18
  FLOW LENGTH(FEET) =    83.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.00
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      4.08
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =   6.77
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.79   5.50    2.356  0.98( 0.20) 0.20     1.8    1071.00
      2      3.92   5.87    2.305  0.98( 0.20) 0.20     1.9    1061.00
      3      4.08   6.77    2.182  0.98( 0.20) 0.20     2.1    1051.00
      4      4.08   6.92    2.161  0.98( 0.20) 0.20     2.1    1041.00
      5      3.94   7.71    2.053  0.98( 0.20) 0.20     2.1    1031.00
      6      3.83   8.24    1.981  0.98( 0.20) 0.20     2.1    1021.00
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.72   5.26    2.389  0.97( 0.19) 0.20     0.4    1001.00
      2      0.72   5.30    2.383  0.98( 0.20) 0.20     0.4    1011.00
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1073.00 =   185.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.40   5.26    2.389  0.97( 0.20) 0.20     2.1    1001.00
      2      4.42   5.30    2.383  0.98( 0.20) 0.20     2.1    1011.00
      3      4.50   5.50    2.356  0.98( 0.20) 0.20     2.1    1071.00
      4      4.62   5.87    2.305  0.98( 0.20) 0.20     2.2    1061.00
      5      4.74   6.77    2.182  0.98( 0.20) 0.20     2.4    1051.00
      6      4.73   6.92    2.161  0.98( 0.20) 0.20     2.4    1041.00
```

```
      7      4.56   7.71    2.053  0.98( 0.20) 0.20     2.5    1031.00
      8      4.42   8.24    1.981  0.98( 0.20) 0.20     2.5    1021.00
    TOTAL AREA(ACRES) =      2.49

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        4.74  Tc(MIN.) =    6.767
  EFFECTIVE AREA(ACRES) =      2.42  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      2.49
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1082.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.98  DOWNSTREAM(FEET) =    25.47
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.21
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      4.74
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =   7.19
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1082.00 =   867.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1082.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   7.19
  RAINFALL INTENSITY(INCH/HR) =   2.12
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     2.42
  TOTAL STREAM AREA(ACRES) =     2.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.74

****************************************************************************
  FLOW PROCESS FROM NODE   1081.00 TO NODE   1081.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.61      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.22
  TOTAL AREA(ACRES) =      0.61   PEAK FLOW RATE(CFS) =      1.22
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1081.00 TO NODE   1082.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    28.41  DOWNSTREAM(FEET) =    25.47
  FLOW LENGTH(FEET) =    14.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.77
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.22
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   5.02
  LONGEST FLOWPATH FROM NODE   1081.00 TO NODE   1082.00 =   120.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1082.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.02
  RAINFALL INTENSITY(INCH/HR) =   2.42
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.61
  TOTAL STREAM AREA(ACRES) =     0.61
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.22

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.40   5.68    2.331  0.97( 0.20) 0.20     2.1    1001.00
      1      4.42   5.72    2.325  0.98( 0.20) 0.20     2.1    1011.00
      1      4.50   5.92    2.298  0.98( 0.20) 0.20     2.1    1071.00
      1      4.62   6.29    2.247  0.98( 0.20) 0.20     2.2    1061.00
      1      4.74   7.19    2.125  0.98( 0.20) 0.20     2.4    1051.00
      1      4.73   7.34    2.104  0.98( 0.20) 0.20     2.4    1041.00
      1      4.56   8.14    1.995  0.98( 0.20) 0.20     2.5    1031.00
      1      4.42   8.66    1.923  0.98( 0.20) 0.20     2.5    1021.00
      2      1.22   5.02    2.421  0.98( 0.20) 0.20     0.6    1081.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.27   5.02    2.421  0.98( 0.20) 0.20     2.4    1081.00
      2      5.57   5.68    2.331  0.98( 0.20) 0.20     2.7    1001.00
      3      5.59   5.72    2.325  0.98( 0.20) 0.20     2.7    1011.00
      4      5.66   5.92    2.298  0.98( 0.20) 0.20     2.7    1071.00
      5      5.75   6.29    2.247  0.98( 0.20) 0.20     2.8    1061.00
      6      5.80   7.19    2.125  0.98( 0.20) 0.20     3.0    1051.00
      7      5.78   7.34    2.104  0.98( 0.20) 0.20     3.1    1041.00
      8      5.55   8.14    1.995  0.98( 0.20) 0.20     3.1    1031.00
      9      5.37   8.66    1.923  0.98( 0.20) 0.20     3.1    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      5.80    Tc(MIN.) =     7.19
```

```
  EFFECTIVE AREA(ACRES) =     3.03   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      3.10
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1082.00 =   867.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1092.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.47  DOWNSTREAM(FEET) =    25.12
  FLOW LENGTH(FEET) =    68.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.51
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      5.80
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =   7.44
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1092.00 =   935.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1092.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   7.44
  RAINFALL INTENSITY(INCH/HR) =   2.09
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     3.03
  TOTAL STREAM AREA(ACRES) =     3.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.80

****************************************************************************
  FLOW PROCESS FROM NODE   1091.00 TO NODE   1091.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    68.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.42      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.84
  TOTAL AREA(ACRES) =      0.42   PEAK FLOW RATE(CFS) =      0.84

****************************************************************************
  FLOW PROCESS FROM NODE   1091.00 TO NODE   1092.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.31  DOWNSTREAM(FEET) =    25.12
  FLOW LENGTH(FEET) =    38.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.78
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.84
  PIPE TRAVEL TIME(MIN.) =   0.23    Tc(MIN.) =   5.23
  LONGEST FLOWPATH FROM NODE   1091.00 TO NODE   1092.00 =   106.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1092.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.23
  RAINFALL INTENSITY(INCH/HR) =   2.39
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.42
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.84

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.27   5.28    2.386  0.98( 0.20) 0.20     2.4    1081.00
      1      5.57   5.94    2.296  0.98( 0.20) 0.20     2.7    1001.00
      1      5.59   5.98    2.290  0.98( 0.20) 0.20     2.7    1011.00
      1      5.66   6.17    2.263  0.98( 0.20) 0.20     2.7    1071.00
      1      5.75   6.54    2.213  0.98( 0.20) 0.20     2.8    1061.00
      1      5.80   7.44    2.090  0.98( 0.20) 0.20     3.0    1051.00
      1      5.78   7.59    2.069  0.98( 0.20) 0.20     3.1    1041.00
      1      5.55   8.39    1.960  0.98( 0.20) 0.20     3.1    1031.00
      1      5.37   8.92    1.888  0.98( 0.20) 0.20     3.1    1021.00
      2      0.84   5.23    2.393  0.98( 0.20) 0.20     0.4    1091.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      6.08   5.23    2.393  0.98( 0.20) 0.20     2.8    1091.00
      2      6.11   5.28    2.386  0.98( 0.20) 0.20     2.8    1081.00
      3      6.37   5.94    2.296  0.98( 0.20) 0.20     3.1    1001.00
      4      6.39   5.98    2.290  0.98( 0.19) 0.20     3.1    1011.00
      5      6.45   6.17    2.263  0.98( 0.20) 0.20     3.2    1071.00
      6      6.52   6.54    2.213  0.98( 0.20) 0.20     3.3    1061.00
      7      6.52   7.44    2.090  0.98( 0.20) 0.20     3.5    1051.00
      8      6.49   7.59    2.069  0.98( 0.20) 0.20     3.5    1041.00
      9      6.22   8.39    1.960  0.98( 0.20) 0.20     3.5    1031.00
     10      6.02   8.92    1.888  0.98( 0.20) 0.20     3.5    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      6.52    Tc(MIN.) =     7.44
  EFFECTIVE AREA(ACRES) =     3.45   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      3.52
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1092.00 =   935.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.12  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =    88.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  13.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.62
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      6.52
  PIPE TRAVEL TIME(MIN.) =   0.32    Tc(MIN.) =   7.76
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   157.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.43      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.86
  TOTAL AREA(ACRES) =      0.43   PEAK FLOW RATE(CFS) =      0.86

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1112.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.61  DOWNSTREAM(FEET) =    26.26
  FLOW LENGTH(FEET) =   274.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.77
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.86
  PIPE TRAVEL TIME(MIN.) =   1.65    Tc(MIN.) =   6.65
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1112.00 =   431.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1112.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.65
  RAINFALL INTENSITY(INCH/HR) =   2.20
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.43
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.86
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1111.00 TO NODE   1111.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   274.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.87      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.75
  TOTAL AREA(ACRES) =      0.87   PEAK FLOW RATE(CFS) =      1.75

****************************************************************************
  FLOW PROCESS FROM NODE   1111.00 TO NODE   1112.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.56  DOWNSTREAM(FEET) =    26.26
  FLOW LENGTH(FEET) =    17.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.35
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.75
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   5.05
  LONGEST FLOWPATH FROM NODE   1111.00 TO NODE   1112.00 =   291.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1112.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.05
  RAINFALL INTENSITY(INCH/HR) =   2.42
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.87
  TOTAL STREAM AREA(ACRES) =     0.87
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.75

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.86   6.65    2.199  0.98( 0.20) 0.20     0.4    1101.00
      2      1.75   5.05    2.417  0.97( 0.20) 0.20     0.9    1111.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      2.47   5.05    2.417  0.98( 0.20) 0.20     1.2    1111.00
```

```
     2      2.44   6.65    2.199  0.97( 0.20) 0.20     1.3    1101.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      2.47    Tc(MIN.) =     5.05
  EFFECTIVE AREA(ACRES) =     1.20   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.30
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1112.00 =   431.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.06  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =   284.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.63
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      2.47
  PIPE TRAVEL TIME(MIN.) =   1.31    Tc(MIN.) =   6.36
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1121.00 TO NODE   1121.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   284.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.43      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.86
  TOTAL AREA(ACRES) =      0.43   PEAK FLOW RATE(CFS) =      0.86

****************************************************************************
  FLOW PROCESS FROM NODE   1121.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.13  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =    31.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.26
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.86
  PIPE TRAVEL TIME(MIN.) =   0.08    Tc(MIN.) =   5.08
  LONGEST FLOWPATH FROM NODE   1121.00 TO NODE   1122.00 =   315.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.86   5.08    2.413  0.98( 0.20) 0.20     0.4    1121.00
  LONGEST FLOWPATH FROM NODE   1121.00 TO NODE   1122.00 =   315.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      2.47   6.36    2.238  0.98( 0.20) 0.20     1.2    1111.00
      2      2.44   7.96    2.019  0.97( 0.20) 0.20     1.3    1101.00
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.01   5.08    2.413  0.98( 0.20) 0.20     1.4    1121.00
      2      3.27   6.36    2.238  0.98( 0.20) 0.20     1.6    1111.00
      3      3.15   7.96    2.019  0.97( 0.20) 0.20     1.7    1101.00
    TOTAL AREA(ACRES) =      1.73

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        3.27  Tc(MIN.) =    6.358
  EFFECTIVE AREA(ACRES) =      1.63  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.73
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.01   5.08    2.413  0.98( 0.20) 0.20     1.4    1121.00
      2      3.27   6.36    2.238  0.98( 0.20) 0.20     1.6    1111.00
      3      3.15   7.96    2.019  0.97( 0.20) 0.20     1.7    1101.00
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      6.08   5.55    2.349  0.98( 0.20) 0.20     2.8    1091.00
      2      6.11   5.60    2.342  0.98( 0.20) 0.20     2.8    1081.00
      3      6.37   6.25    2.252  0.98( 0.20) 0.20     3.1    1001.00
      4      6.39   6.30    2.247  0.98( 0.19) 0.20     3.1    1011.00
      5      6.45   6.49    2.220  0.98( 0.20) 0.20     3.2    1071.00
      6      6.52   6.86    2.170  0.98( 0.20) 0.20     3.3    1061.00
      7      6.52   7.76    2.047  0.98( 0.20) 0.20     3.5    1051.00
      8      6.49   7.91    2.026  0.98( 0.20) 0.20     3.5    1041.00
      9      6.22   8.71    1.916  0.98( 0.20) 0.20     3.5    1031.00
```

```
    10      6.02   9.24    1.844  0.98( 0.20) 0.20     3.5    1021.00
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      8.74   5.08    2.413  0.97( 0.20) 0.20     4.0    1121.00
      2      9.18   5.55    2.349  0.98( 0.20) 0.20     4.3    1091.00
      3      9.22   5.60    2.342  0.98( 0.20) 0.20     4.3    1081.00
      4      9.62   6.25    2.252  0.98( 0.20) 0.20     4.7    1001.00
      5      9.65   6.30    2.247  0.98( 0.20) 0.20     4.7    1011.00
      6      9.68   6.36    2.238  0.98( 0.19) 0.20     4.7    1111.00
      7      9.71   6.49    2.220  0.98( 0.20) 0.20     4.8    1071.00
      8      9.75   6.86    2.170  0.98( 0.19) 0.20     4.9    1061.00
      9      9.68   7.76    2.047  0.98( 0.20) 0.20     5.2    1051.00
     10      9.64   7.91    2.026  0.98( 0.20) 0.20     5.2    1041.00
     11      9.62   7.96    2.019  0.98( 0.20) 0.20     5.2    1101.00
     12      9.19   8.71    1.916  0.98( 0.20) 0.20     5.2    1031.00
     13      8.87   9.24    1.844  0.98( 0.20) 0.20     5.2    1021.00
    TOTAL AREA(ACRES) =      5.25

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        9.75  Tc(MIN.) =    6.860
  EFFECTIVE AREA(ACRES) =      4.93  AREA-AVERAGED Fm(INCH/HR) =  0.19
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      5.25
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1123.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    24.46  DOWNSTREAM(FEET) =    24.34
  FLOW LENGTH(FEET) =    33.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.53
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      9.75
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =   6.98
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1123.00 =  1056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1123.00 TO NODE   1123.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   2001.00 TO NODE   2001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    33.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
```

```
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.22      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.44
  TOTAL AREA(ACRES) =      0.22   PEAK FLOW RATE(CFS) =      0.44

****************************************************************************
  FLOW PROCESS FROM NODE   2001.00 TO NODE   2001.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3001.00 TO NODE   3001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  3300.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.424
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.27      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.54
  TOTAL AREA(ACRES) =      0.27   PEAK FLOW RATE(CFS) =      0.54

****************************************************************************
  FLOW PROCESS FROM NODE   3001.00 TO NODE   3001.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      0.01  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.01  AREA-AVERAGED Fm(INCH/HR)=  0.00
  AREA-AVERAGED Fp(INCH/HR) =  0.00  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)   =      1.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
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             Ver. 8.0  Release Date: 01/01/2003  License ID 1510

                           Analysis prepared by:

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 ************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AT CASA LOMA - REDLANDS                                        *
* PROPOSED CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 25-YEAR                                            *
 ****************************************************************************

  FILE NAME: 1803P025.DAT
  TIME/DATE OF STUDY: 16:00 03/14/2018
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   25.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  5
   1)   5.000;  2.976
   2)  10.000;  2.136
   3)  15.000;  1.720
   4)  30.000;  1.274
   5)  60.000;  0.913
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
```

```
  APARTMENTS                  A        0.01      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.03
  TOTAL AREA(ACRES) =      0.01   PEAK FLOW RATE(CFS) =      0.03

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1012.00 IS CODE =  31
----------------------------------------------------------------------------
  ** WARNING: Computed Flowrate is less than 0.1 cfs,
               Routing Algorithm is UNAVAILABLE.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1012.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.00
  RAINFALL INTENSITY(INCH/HR) =   2.98
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.01
  TOTAL STREAM AREA(ACRES) =     0.01
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.03

****************************************************************************
  FLOW PROCESS FROM NODE   1011.00 TO NODE   1011.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                  A        0.35      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.88
  TOTAL AREA(ACRES) =      0.35   PEAK FLOW RATE(CFS) =      0.88

****************************************************************************
  FLOW PROCESS FROM NODE   1011.00 TO NODE   1012.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.58  DOWNSTREAM(FEET) =    30.80
  FLOW LENGTH(FEET) =    15.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.51
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.88
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   5.04
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1012.00 =    92.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1012.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.04
  RAINFALL INTENSITY(INCH/HR) =   2.97
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.35
  TOTAL STREAM AREA(ACRES) =     0.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.88

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.03   5.00    2.976  0.97( 0.20) 0.20     0.0    1001.00
      2      0.88   5.04    2.970  0.98( 0.20) 0.20     0.3    1011.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.90   5.00    2.976  0.98( 0.20) 0.20     0.4    1001.00
      2      0.90   5.04    2.970  0.98( 0.20) 0.20     0.4    1011.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      0.90    Tc(MIN.) =     5.04
  EFFECTIVE AREA(ACRES) =     0.36   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.36
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1012.00 =    92.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1073.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    30.80  DOWNSTREAM(FEET) =    26.18
  FLOW LENGTH(FEET) =    93.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.47
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.90
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =   5.28
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1073.00 =   185.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1021.00 TO NODE   1021.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
```

```
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.14      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.35
  TOTAL AREA(ACRES) =      0.14   PEAK FLOW RATE(CFS) =      0.35

****************************************************************************
  FLOW PROCESS FROM NODE   1021.00 TO NODE   1031.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    32.50  DOWNSTREAM(FEET) =    31.70
  FLOW LENGTH(FEET) =    80.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.76
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.35
  PIPE TRAVEL TIME(MIN.) =   0.48    Tc(MIN.) =   5.48
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1031.00 =   173.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.48
  RAINFALL INTENSITY(INCH/HR) =   2.89
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.14
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.35

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.14      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.35
  TOTAL AREA(ACRES) =      0.14   PEAK FLOW RATE(CFS) =      0.35

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
```

```
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.00
  RAINFALL INTENSITY(INCH/HR) =   2.98
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.14
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.35

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.35   5.48    2.895  0.98( 0.20) 0.20     0.1    1021.00
      2      0.35   5.00    2.976  0.98( 0.20) 0.20     0.1    1031.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.68   5.00    2.976  0.97( 0.19) 0.20     0.3    1031.00
      2      0.69   5.48    2.895  0.98( 0.20) 0.20     0.3    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      0.69    Tc(MIN.) =     5.48
  EFFECTIVE AREA(ACRES) =     0.28   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.28
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1031.00 =   173.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1042.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.70  DOWNSTREAM(FEET) =    28.30
  FLOW LENGTH(FEET) =   190.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.17
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.69
  PIPE TRAVEL TIME(MIN.) =   0.76    Tc(MIN.) =   6.24
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1042.00 =   363.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1042.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.24
  RAINFALL INTENSITY(INCH/HR) =   2.77
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.28
  TOTAL STREAM AREA(ACRES) =     0.28
```

```
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE   1041.00 TO NODE   1041.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   190.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.49      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.23
  TOTAL AREA(ACRES) =      0.49   PEAK FLOW RATE(CFS) =      1.23

****************************************************************************
  FLOW PROCESS FROM NODE   1041.00 TO NODE   1042.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.08  DOWNSTREAM(FEET) =    28.30
  FLOW LENGTH(FEET) =    14.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.57
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.23
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   5.02
  LONGEST FLOWPATH FROM NODE   1041.00 TO NODE   1042.00 =   204.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1042.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.02
  RAINFALL INTENSITY(INCH/HR) =   2.97
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.49
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.23

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.68   5.76    2.848  0.97( 0.19) 0.20     0.3    1031.00
      1      0.69   6.24    2.767  0.98( 0.20) 0.20     0.3    1021.00
      2      1.23   5.02    2.973  0.98( 0.20) 0.20     0.5    1041.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
```

```
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.85   5.02    2.973  0.98( 0.20) 0.20     0.7    1041.00
      2      1.85   5.76    2.848  0.97( 0.19) 0.20     0.8    1031.00
      3      1.83   6.24    2.767  0.98( 0.20) 0.20     0.8    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      1.85    Tc(MIN.) =     5.76
  EFFECTIVE AREA(ACRES) =     0.76   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.77
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1042.00 =   363.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1052.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    28.30  DOWNSTREAM(FEET) =    27.52
  FLOW LENGTH(FEET) =   167.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.27
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.85
  PIPE TRAVEL TIME(MIN.) =   0.85    Tc(MIN.) =   6.62
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1052.00 =   530.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1052.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.62
  RAINFALL INTENSITY(INCH/HR) =   2.70
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.76
  TOTAL STREAM AREA(ACRES) =     0.77
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.85

****************************************************************************
  FLOW PROCESS FROM NODE   1051.00 TO NODE   1051.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   167.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.59      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.48
  TOTAL AREA(ACRES) =      0.59   PEAK FLOW RATE(CFS) =      1.48

****************************************************************************
  FLOW PROCESS FROM NODE   1051.00 TO NODE   1052.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    29.24  DOWNSTREAM(FEET) =    27.52
  FLOW LENGTH(FEET) =   177.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.11
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.48
  PIPE TRAVEL TIME(MIN.) =   0.72    Tc(MIN.) =   5.72
  LONGEST FLOWPATH FROM NODE   1051.00 TO NODE   1052.00 =   344.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1052.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.72
  RAINFALL INTENSITY(INCH/HR) =   2.86
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.59
  TOTAL STREAM AREA(ACRES) =     0.59
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.48

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.85   5.87    2.830  0.98( 0.20) 0.20     0.7    1041.00
      1      1.85   6.62    2.705  0.97( 0.19) 0.20     0.8    1031.00
      1      1.83   7.10    2.624  0.98( 0.20) 0.20     0.8    1021.00
      2      1.48   5.72    2.855  0.98( 0.20) 0.20     0.6    1051.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.29   5.72    2.855  0.98( 0.20) 0.20     1.3    1051.00
      2      3.31   5.87    2.830  0.98( 0.20) 0.20     1.3    1041.00
      3      3.24   6.62    2.705  0.98( 0.19) 0.20     1.3    1031.00
      4      3.17   7.10    2.624  0.98( 0.20) 0.20     1.4    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      3.31    Tc(MIN.) =     5.87
  EFFECTIVE AREA(ACRES) =     1.31   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.36
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1052.00 =   530.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1062.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.32  DOWNSTREAM(FEET) =    26.74
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.88
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      3.31
  PIPE TRAVEL TIME(MIN.) =   0.50    Tc(MIN.) =   6.37
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1062.00 =   647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1062.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.37
  RAINFALL INTENSITY(INCH/HR) =   2.75
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     1.31
  TOTAL STREAM AREA(ACRES) =     1.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.31

****************************************************************************
  FLOW PROCESS FROM NODE   1061.00 TO NODE   1061.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   166.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.46      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.15
  TOTAL AREA(ACRES) =      0.46   PEAK FLOW RATE(CFS) =      1.15

****************************************************************************
  FLOW PROCESS FROM NODE   1061.00 TO NODE   1062.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.07  DOWNSTREAM(FEET) =    26.74
  FLOW LENGTH(FEET) =    66.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.02
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.15
  PIPE TRAVEL TIME(MIN.) =   0.36    Tc(MIN.) =   5.36
  LONGEST FLOWPATH FROM NODE   1061.00 TO NODE   1062.00 =   232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1062.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.36
  RAINFALL INTENSITY(INCH/HR) =   2.91
  AREA-AVERAGED Fm(INCH/HR) =  0.20
```

```
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.46
  TOTAL STREAM AREA(ACRES) =     0.46
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.15

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.29   6.22    2.771  0.98( 0.20) 0.20     1.3    1051.00
      1      3.31   6.37    2.745  0.98( 0.20) 0.20     1.3    1041.00
      1      3.24   7.12    2.620  0.98( 0.19) 0.20     1.3    1031.00
      1      3.17   7.60    2.539  0.98( 0.20) 0.20     1.4    1021.00
      2      1.15   5.36    2.915  0.98( 0.20) 0.20     0.5    1061.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.15   5.36    2.915  0.98( 0.20) 0.20     1.6    1061.00
      2      4.38   6.22    2.771  0.98( 0.20) 0.20     1.8    1051.00
      3      4.39   6.37    2.745  0.98( 0.20) 0.20     1.8    1041.00
      4      4.27   7.12    2.620  0.98( 0.20) 0.20     1.8    1031.00
      5      4.17   7.60    2.539  0.98( 0.20) 0.20     1.8    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      4.39    Tc(MIN.) =     6.37
  EFFECTIVE AREA(ACRES) =     1.77   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.82
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1062.00 =   647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1072.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.74  DOWNSTREAM(FEET) =    26.59
  FLOW LENGTH(FEET) =    31.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.15
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      4.39
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =   6.50
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1072.00 =   678.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1072.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.50
  RAINFALL INTENSITY(INCH/HR) =   2.72
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     1.77
  TOTAL STREAM AREA(ACRES) =     1.82
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.39
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1071.00 TO NODE   1071.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    31.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.31      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.78
  TOTAL AREA(ACRES) =      0.31   PEAK FLOW RATE(CFS) =      0.78

****************************************************************************
  FLOW PROCESS FROM NODE   1071.00 TO NODE   1072.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.71  DOWNSTREAM(FEET) =    26.59
  FLOW LENGTH(FEET) =    23.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.76
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.78
  PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =   5.14
  LONGEST FLOWPATH FROM NODE   1071.00 TO NODE   1072.00 =    54.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1072.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.14
  RAINFALL INTENSITY(INCH/HR) =   2.95
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.31
  TOTAL STREAM AREA(ACRES) =     0.31
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.78

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.15   5.49    2.893  0.98( 0.20) 0.20     1.6    1061.00
      1      4.38   6.35    2.750  0.98( 0.20) 0.20     1.8    1051.00
      1      4.39   6.50    2.724  0.98( 0.20) 0.20     1.8    1041.00
      1      4.27   7.25    2.599  0.98( 0.20) 0.20     1.8    1031.00
      1      4.17   7.73    2.517  0.98( 0.20) 0.20     1.8    1021.00
      2      0.78   5.14    2.953  0.98( 0.20) 0.20     0.3    1071.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
```

```
  STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      4.74   5.14    2.953  0.98( 0.20) 0.20     1.8    1071.00
     2      4.91   5.49    2.893  0.98( 0.20) 0.20     1.9    1061.00
     3      5.10   6.35    2.750  0.98( 0.20) 0.20     2.1    1051.00
     4      5.10   6.50    2.724  0.98( 0.20) 0.20     2.1    1041.00
     5      4.95   7.25    2.599  0.98( 0.20) 0.20     2.1    1031.00
     6      4.82   7.73    2.517  0.98( 0.20) 0.20     2.1    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      5.10    Tc(MIN.) =     6.35
  EFFECTIVE AREA(ACRES) =     2.06   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      2.13
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1072.00 =   678.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1073.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.59  DOWNSTREAM(FEET) =    26.18
  FLOW LENGTH(FEET) =    83.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.33
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      5.10
  PIPE TRAVEL TIME(MIN.) =   0.32    Tc(MIN.) =   6.67
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      4.74   5.46    2.898  0.98( 0.20) 0.20     1.8    1071.00
     2      4.91   5.82    2.839  0.98( 0.20) 0.20     1.9    1061.00
     3      5.10   6.67    2.696  0.98( 0.20) 0.20     2.1    1051.00
     4      5.10   6.82    2.671  0.98( 0.20) 0.20     2.1    1041.00
     5      4.95   7.57    2.545  0.98( 0.20) 0.20     2.1    1031.00
     6      4.82   8.06    2.462  0.98( 0.20) 0.20     2.1    1021.00
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      0.90   5.24    2.936  0.98( 0.20) 0.20     0.4    1001.00
     2      0.90   5.28    2.929  0.98( 0.20) 0.20     0.4    1011.00
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1073.00 =   185.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      5.51   5.24    2.936  0.98( 0.20) 0.20     2.1    1001.00
     2      5.53   5.28    2.929  0.98( 0.20) 0.20     2.1    1011.00
     3      5.63   5.46    2.898  0.98( 0.20) 0.20     2.1    1071.00
     4      5.78   5.82    2.839  0.98( 0.20) 0.20     2.2    1061.00
     5      5.93   6.67    2.696  0.98( 0.20) 0.20     2.4    1051.00
     6      5.92   6.82    2.671  0.98( 0.20) 0.20     2.4    1041.00
     7      5.72   7.57    2.545  0.98( 0.20) 0.20     2.5    1031.00
```

```
      8      5.57   8.06    2.462  0.98( 0.20) 0.20     2.5    1021.00
    TOTAL AREA(ACRES) =      2.49

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        5.93  Tc(MIN.) =    6.665
  EFFECTIVE AREA(ACRES) =      2.42  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      2.49
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1082.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.98  DOWNSTREAM(FEET) =    25.47
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.40
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      5.93
  PIPE TRAVEL TIME(MIN.) =   0.40    Tc(MIN.) =   7.07
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1082.00 =   867.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1082.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   7.07
  RAINFALL INTENSITY(INCH/HR) =   2.63
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     2.42
  TOTAL STREAM AREA(ACRES) =     2.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.93

****************************************************************************
  FLOW PROCESS FROM NODE   1081.00 TO NODE   1081.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.61      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.53
  TOTAL AREA(ACRES) =      0.61   PEAK FLOW RATE(CFS) =      1.53
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1081.00 TO NODE   1082.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    28.41  DOWNSTREAM(FEET) =    25.47
  FLOW LENGTH(FEET) =    14.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  12.54
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.53
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   5.02
  LONGEST FLOWPATH FROM NODE   1081.00 TO NODE   1082.00 =   120.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1082.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.02
  RAINFALL INTENSITY(INCH/HR) =   2.97
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.61
  TOTAL STREAM AREA(ACRES) =     0.61
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.53

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.51   5.65    2.867  0.98( 0.20) 0.20     2.1    1001.00
      1      5.53   5.68    2.861  0.98( 0.20) 0.20     2.1    1011.00
      1      5.63   5.87    2.830  0.98( 0.20) 0.20     2.1    1071.00
      1      5.78   6.22    2.771  0.98( 0.20) 0.20     2.2    1061.00
      1      5.93   7.07    2.629  0.98( 0.20) 0.20     2.4    1051.00
      1      5.92   7.22    2.603  0.98( 0.20) 0.20     2.4    1041.00
      1      5.72   7.97    2.477  0.98( 0.20) 0.20     2.5    1031.00
      1      5.57   8.46    2.394  0.98( 0.20) 0.20     2.5    1021.00
      2      1.53   5.02    2.973  0.98( 0.20) 0.20     0.6    1081.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      6.61   5.02    2.973  0.98( 0.20) 0.20     2.4    1081.00
      2      6.98   5.65    2.867  0.98( 0.20) 0.20     2.7    1001.00
      3      7.00   5.68    2.861  0.98( 0.20) 0.20     2.7    1011.00
      4      7.08   5.87    2.830  0.98( 0.20) 0.20     2.8    1071.00
      5      7.19   6.22    2.771  0.98( 0.20) 0.20     2.9    1061.00
      6      7.26   7.07    2.629  0.98( 0.20) 0.20     3.0    1051.00
      7      7.24   7.22    2.603  0.98( 0.20) 0.20     3.1    1041.00
      8      6.97   7.97    2.477  0.98( 0.20) 0.20     3.1    1031.00
      9      6.78   8.46    2.394  0.98( 0.20) 0.20     3.1    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      7.26    Tc(MIN.) =     7.07
  EFFECTIVE AREA(ACRES) =     3.03   AREA-AVERAGED Fm(INCH/HR) =  0.20
```

```
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      3.10
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1082.00 =   867.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1092.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.47  DOWNSTREAM(FEET) =    25.12
  FLOW LENGTH(FEET) =    68.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.81
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      7.26
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =   7.30
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1092.00 =   935.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1092.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   7.30
  RAINFALL INTENSITY(INCH/HR) =   2.59
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     3.03
  TOTAL STREAM AREA(ACRES) =     3.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.26

****************************************************************************
  FLOW PROCESS FROM NODE   1091.00 TO NODE   1091.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    68.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.42      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.05
  TOTAL AREA(ACRES) =      0.42   PEAK FLOW RATE(CFS) =      1.05

****************************************************************************
  FLOW PROCESS FROM NODE   1091.00 TO NODE   1092.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.31  DOWNSTREAM(FEET) =    25.12
  FLOW LENGTH(FEET) =    38.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.94
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
```

```
  PIPE-FLOW(CFS) =      1.05
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =   5.22
  LONGEST FLOWPATH FROM NODE   1091.00 TO NODE   1092.00 =   106.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1092.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.22
  RAINFALL INTENSITY(INCH/HR) =   2.94
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.42
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.05

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      6.61   5.27    2.931  0.98( 0.20) 0.20     2.4    1081.00
      1      6.98   5.89    2.826  0.98( 0.20) 0.20     2.7    1001.00
      1      7.00   5.93    2.820  0.98( 0.20) 0.20     2.7    1011.00
      1      7.08   6.12    2.789  0.98( 0.20) 0.20     2.8    1071.00
      1      7.19   6.46    2.731  0.98( 0.20) 0.20     2.9    1061.00
      1      7.26   7.30    2.589  0.98( 0.20) 0.20     3.0    1051.00
      1      7.24   7.46    2.563  0.98( 0.20) 0.20     3.1    1041.00
      1      6.97   8.22    2.435  0.98( 0.20) 0.20     3.1    1031.00
      1      6.78   8.71    2.353  0.98( 0.20) 0.20     3.1    1021.00
      2      1.05   5.22    2.940  0.98( 0.20) 0.20     0.4    1091.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      7.62   5.22    2.940  0.98( 0.20) 0.20     2.8    1091.00
      2      7.66   5.27    2.931  0.98( 0.19) 0.20     2.9    1081.00
      3      7.98   5.89    2.826  0.98( 0.19) 0.20     3.1    1001.00
      4      8.01   5.93    2.820  0.98( 0.19) 0.20     3.1    1011.00
      5      8.07   6.12    2.789  0.98( 0.20) 0.20     3.2    1071.00
      6      8.17   6.46    2.731  0.98( 0.20) 0.20     3.3    1061.00
      7      8.18   7.30    2.589  0.98( 0.20) 0.20     3.5    1051.00
      8      8.15   7.46    2.563  0.98( 0.20) 0.20     3.5    1041.00
      9      7.83   8.22    2.435  0.98( 0.20) 0.20     3.5    1031.00
     10      7.60   8.71    2.353  0.98( 0.20) 0.20     3.5    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      8.18    Tc(MIN.) =     7.30
  EFFECTIVE AREA(ACRES) =     3.45   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      3.52
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1092.00 =   935.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
```

```
  ELEVATION DATA: UPSTREAM(FEET) =    25.12  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =    88.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.96
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      8.18
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =   7.60
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   157.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.43      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.08
  TOTAL AREA(ACRES) =      0.43   PEAK FLOW RATE(CFS) =      1.08

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1112.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.61  DOWNSTREAM(FEET) =    26.26
  FLOW LENGTH(FEET) =   274.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.94
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.08
  PIPE TRAVEL TIME(MIN.) =   1.55    Tc(MIN.) =   6.55
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1112.00 =   431.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1112.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.55
  RAINFALL INTENSITY(INCH/HR) =   2.72
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.43
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.08
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1111.00 TO NODE   1111.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   274.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.87      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      2.18
  TOTAL AREA(ACRES) =      0.87   PEAK FLOW RATE(CFS) =      2.18

****************************************************************************
  FLOW PROCESS FROM NODE   1111.00 TO NODE   1112.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.56  DOWNSTREAM(FEET) =    26.26
  FLOW LENGTH(FEET) =    17.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.68
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      2.18
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   5.05
  LONGEST FLOWPATH FROM NODE   1111.00 TO NODE   1112.00 =   291.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1112.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.05
  RAINFALL INTENSITY(INCH/HR) =   2.97
  AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.87
  TOTAL STREAM AREA(ACRES) =     0.87
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.18

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.08   6.55    2.715  0.98( 0.20) 0.20     0.4    1101.00
      2      2.18   5.05    2.968  0.97( 0.20) 0.20     0.9    1111.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.09   5.05    2.968  0.97( 0.19) 0.20     1.2    1111.00
      2      3.06   6.55    2.715  0.97( 0.20) 0.20     1.3    1101.00
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      3.09    Tc(MIN.) =     5.05
  EFFECTIVE AREA(ACRES) =     1.20   AREA-AVERAGED Fm(INCH/HR) =  0.20
  AREA-AVERAGED Fp(INCH/HR) =  0.97  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.30
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1112.00 =   431.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.06  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =   284.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.81
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      3.09
  PIPE TRAVEL TIME(MIN.) =   1.24    Tc(MIN.) =   6.29
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1121.00 TO NODE   1121.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   284.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.43      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.08
  TOTAL AREA(ACRES) =      0.43   PEAK FLOW RATE(CFS) =      1.08

****************************************************************************
  FLOW PROCESS FROM NODE   1121.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.13  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =    31.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.70
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.08
  PIPE TRAVEL TIME(MIN.) =   0.08    Tc(MIN.) =   5.08
  LONGEST FLOWPATH FROM NODE   1121.00 TO NODE   1122.00 =   315.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  11
----------------------------------------------------------------------------
```

```
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.08   5.08    2.963  0.98( 0.20) 0.20     0.4    1121.00
  LONGEST FLOWPATH FROM NODE   1121.00 TO NODE   1122.00 =   315.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.09   6.29    2.759  0.97( 0.19) 0.20     1.2    1111.00
      2      3.06   7.80    2.506  0.97( 0.20) 0.20     1.3    1101.00
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.77   5.08    2.963  0.98( 0.20) 0.20     1.4    1121.00
      2      4.09   6.29    2.759  0.97( 0.19) 0.20     1.6    1111.00
      3      3.95   7.80    2.506  0.97( 0.20) 0.20     1.7    1101.00
    TOTAL AREA(ACRES) =      1.73

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        4.09  Tc(MIN.) =    6.292
  EFFECTIVE AREA(ACRES) =      1.63  AREA-AVERAGED Fm(INCH/HR) =  0.19
  AREA-AVERAGED Fp(INCH/HR) =  0.97  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.73
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
==============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      3.77   5.08    2.963  0.98( 0.20) 0.20     1.4    1121.00
      2      4.09   6.29    2.759  0.97( 0.19) 0.20     1.6    1111.00
      3      3.95   7.80    2.506  0.97( 0.20) 0.20     1.7    1101.00
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      7.62   5.51    2.889  0.98( 0.20) 0.20     2.8    1091.00
      2      7.66   5.56    2.881  0.98( 0.19) 0.20     2.9    1081.00
      3      7.98   6.19    2.776  0.98( 0.19) 0.20     3.1    1001.00
      4      8.01   6.23    2.770  0.98( 0.19) 0.20     3.1    1011.00
      5      8.07   6.41    2.739  0.98( 0.20) 0.20     3.2    1071.00
      6      8.17   6.75    2.682  0.98( 0.20) 0.20     3.3    1061.00
      7      8.18   7.60    2.539  0.98( 0.20) 0.20     3.5    1051.00
      8      8.15   7.75    2.514  0.98( 0.20) 0.20     3.5    1041.00
      9      7.83   8.52    2.385  0.98( 0.20) 0.20     3.5    1031.00
     10      7.60   9.01    2.302  0.98( 0.20) 0.20     3.5    1021.00
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.
```

```
** PEAK FLOW RATE TABLE **
 STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
 NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
    1     10.98   5.08    2.963  0.98( 0.20) 0.20     4.0    1121.00
    2     11.51   5.51    2.889  0.98( 0.20) 0.20     4.3    1091.00
    3     11.56   5.56    2.881  0.98( 0.20) 0.20     4.4    1081.00
    4     12.04   6.19    2.776  0.98( 0.20) 0.20     4.7    1001.00
    5     12.08   6.23    2.770  0.98( 0.20) 0.20     4.7    1011.00
    6     12.12   6.29    2.759  0.98( 0.19) 0.20     4.8    1111.00
    7     12.15   6.41    2.739  0.98( 0.20) 0.20     4.8    1071.00
    8     12.21   6.75    2.682  0.98( 0.20) 0.20     4.9    1061.00
    9     12.15   7.60    2.539  0.98( 0.20) 0.20     5.2    1051.00
   10     12.10   7.75    2.514  0.98( 0.20) 0.20     5.2    1041.00
   11     12.08   7.80    2.506  0.98( 0.20) 0.20     5.2    1101.00
   12     11.58   8.52    2.385  0.98( 0.20) 0.20     5.2    1031.00
   13     11.21   9.01    2.302  0.98( 0.20) 0.20     5.2    1021.00
  TOTAL AREA(ACRES) =      5.25

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) =       12.21  Tc(MIN.) =    6.753
EFFECTIVE AREA(ACRES) =      4.94  AREA-AVERAGED Fm(INCH/HR) =  0.20
AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.20
TOTAL AREA(ACRES) =      5.25
LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  12
----------------------------------------------------------------------------
>>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
FLOW PROCESS FROM NODE   1122.00 TO NODE   1123.00 IS CODE =  31
----------------------------------------------------------------------------
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =    24.46  DOWNSTREAM(FEET) =    24.34
FLOW LENGTH(FEET) =    33.00   MANNING'S N =  0.013
DEPTH OF FLOW IN  24.0 INCH PIPE IS  18.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =   4.68
ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
PIPE-FLOW(CFS) =     12.21
PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =   6.87
LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1123.00 =  1056.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE   1123.00 TO NODE   1123.00 IS CODE =  13
----------------------------------------------------------------------------
>>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
FLOW PROCESS FROM NODE   2001.00 TO NODE   2001.00 IS CODE =  22
----------------------------------------------------------------------------
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
INITIAL SUBAREA FLOW-LENGTH(FEET) =    33.00
USER SPECIFIED Tc(MIN.) =    5.000
*  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
SUBAREA LOSS RATE DATA(AMC  II):
 DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
     LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
```

```
  APARTMENTS                  A        0.22      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.55
  TOTAL AREA(ACRES) =      0.22   PEAK FLOW RATE(CFS) =      0.55

****************************************************************************
  FLOW PROCESS FROM NODE   2001.00 TO NODE   2001.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3001.00 TO NODE   3001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  3300.00
  USER SPECIFIED Tc(MIN.) =    5.000
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  2.976
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                  A        0.27      0.98      0.20    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.68
  TOTAL AREA(ACRES) =      0.27   PEAK FLOW RATE(CFS) =      0.68

****************************************************************************
  FLOW PROCESS FROM NODE   3001.00 TO NODE   3001.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      0.01  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.01  AREA-AVERAGED Fm(INCH/HR)=  0.00
  AREA-AVERAGED Fp(INCH/HR) =  0.00  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)   =      1.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
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             Ver. 8.0  Release Date: 01/01/2003  License ID 1510

                           Analysis prepared by:

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 ************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AT CASA LOMA - REDLANDS                                        *
* PROPOSED CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 100-YEAR                                           *
 ****************************************************************************

  FILE NAME: 1803P100.DAT
  TIME/DATE OF STUDY: 16:00 03/14/2018
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  5
   1)   5.000;  3.864
   2)  10.000;  2.772
   3)  15.000;  2.232
   4)  30.000;  1.654
   5)  60.000;  1.190
  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
```

```
  APARTMENTS                  A        0.01      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.03
  TOTAL AREA(ACRES) =      0.01   PEAK FLOW RATE(CFS) =      0.03

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1012.00 IS CODE =  31
----------------------------------------------------------------------------
  ** WARNING: Computed Flowrate is less than 0.1 cfs,
               Routing Algorithm is UNAVAILABLE.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1012.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.00
  RAINFALL INTENSITY(INCH/HR) =   3.86
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.01
  TOTAL STREAM AREA(ACRES) =     0.01
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.03

****************************************************************************
  FLOW PROCESS FROM NODE   1011.00 TO NODE   1011.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                  A        0.35      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.17
  TOTAL AREA(ACRES) =      0.35   PEAK FLOW RATE(CFS) =      1.17

****************************************************************************
  FLOW PROCESS FROM NODE   1011.00 TO NODE   1012.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.58  DOWNSTREAM(FEET) =    30.80
  FLOW LENGTH(FEET) =    15.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.08
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.17
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   5.04
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1012.00 =    92.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1012.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.04
  RAINFALL INTENSITY(INCH/HR) =   3.86
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.35
  TOTAL STREAM AREA(ACRES) =     0.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.17

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.03   5.00    3.864  0.80( 0.16) 0.20     0.0    1001.00
      2      1.17   5.04    3.856  0.80( 0.16) 0.20     0.3    1011.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.19   5.00    3.864  0.80( 0.16) 0.20     0.4    1001.00
      2      1.20   5.04    3.856  0.80( 0.16) 0.20     0.4    1011.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      1.20    Tc(MIN.) =     5.04
  EFFECTIVE AREA(ACRES) =     0.36   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.36
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1012.00 =    92.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1012.00 TO NODE   1073.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    30.80  DOWNSTREAM(FEET) =    26.18
  FLOW LENGTH(FEET) =    93.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.02
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.20
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =   5.26
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1073.00 =   185.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1021.00 TO NODE   1021.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
```

```
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.14      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.47
  TOTAL AREA(ACRES) =      0.14   PEAK FLOW RATE(CFS) =      0.47

****************************************************************************
  FLOW PROCESS FROM NODE   1021.00 TO NODE   1031.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    32.50  DOWNSTREAM(FEET) =    31.70
  FLOW LENGTH(FEET) =    80.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.00
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.47
  PIPE TRAVEL TIME(MIN.) =   0.44    Tc(MIN.) =   5.44
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1031.00 =   173.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.44
  RAINFALL INTENSITY(INCH/HR) =   3.77
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.14
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.47

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.14      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.47
  TOTAL AREA(ACRES) =      0.14   PEAK FLOW RATE(CFS) =      0.47

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1031.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
```

```
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.00
  RAINFALL INTENSITY(INCH/HR) =   3.86
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.14
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.47

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.47   5.44    3.767  0.80( 0.16) 0.20     0.1    1021.00
      2      0.47   5.00    3.864  0.80( 0.16) 0.20     0.1    1031.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.91   5.00    3.864  0.80( 0.16) 0.20     0.3    1031.00
      2      0.92   5.44    3.767  0.80( 0.16) 0.20     0.3    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      0.92    Tc(MIN.) =     5.44
  EFFECTIVE AREA(ACRES) =     0.28   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.28
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1031.00 =   173.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1031.00 TO NODE   1042.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.70  DOWNSTREAM(FEET) =    28.30
  FLOW LENGTH(FEET) =   190.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.53
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.92
  PIPE TRAVEL TIME(MIN.) =   0.70    Tc(MIN.) =   6.14
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1042.00 =   363.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1042.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.14
  RAINFALL INTENSITY(INCH/HR) =   3.61
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.28
  TOTAL STREAM AREA(ACRES) =     0.28
```

```
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.92

****************************************************************************
  FLOW PROCESS FROM NODE   1041.00 TO NODE   1041.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   190.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.49      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.63
  TOTAL AREA(ACRES) =      0.49   PEAK FLOW RATE(CFS) =      1.63

****************************************************************************
  FLOW PROCESS FROM NODE   1041.00 TO NODE   1042.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    31.08  DOWNSTREAM(FEET) =    28.30
  FLOW LENGTH(FEET) =    14.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  12.57
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.63
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   5.02
  LONGEST FLOWPATH FROM NODE   1041.00 TO NODE   1042.00 =   204.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1042.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.02
  RAINFALL INTENSITY(INCH/HR) =   3.86
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.49
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.63

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      0.91   5.70    3.710  0.80( 0.16) 0.20     0.3    1031.00
      1      0.92   6.14    3.614  0.80( 0.16) 0.20     0.3    1021.00
      2      1.63   5.02    3.860  0.80( 0.16) 0.20     0.5    1041.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
```

```
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      2.47   5.02    3.860  0.80( 0.16) 0.20     0.7    1041.00
      2      2.47   5.70    3.710  0.80( 0.16) 0.20     0.8    1031.00
      3      2.45   6.14    3.614  0.80( 0.16) 0.20     0.8    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      2.47    Tc(MIN.) =     5.70
  EFFECTIVE AREA(ACRES) =     0.76   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      0.77
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1042.00 =   363.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1042.00 TO NODE   1052.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    28.30  DOWNSTREAM(FEET) =    27.52
  FLOW LENGTH(FEET) =   167.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.56
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      2.47
  PIPE TRAVEL TIME(MIN.) =   0.78    Tc(MIN.) =   6.49
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1052.00 =   530.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1052.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.49
  RAINFALL INTENSITY(INCH/HR) =   3.54
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.76
  TOTAL STREAM AREA(ACRES) =     0.77
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.47

****************************************************************************
  FLOW PROCESS FROM NODE   1051.00 TO NODE   1051.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   167.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.59      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.97
  TOTAL AREA(ACRES) =      0.59   PEAK FLOW RATE(CFS) =      1.97

****************************************************************************
  FLOW PROCESS FROM NODE   1051.00 TO NODE   1052.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    29.24  DOWNSTREAM(FEET) =    27.52
  FLOW LENGTH(FEET) =   177.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.42
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.97
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =   5.67
  LONGEST FLOWPATH FROM NODE   1051.00 TO NODE   1052.00 =   344.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1052.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.67
  RAINFALL INTENSITY(INCH/HR) =   3.72
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.59
  TOTAL STREAM AREA(ACRES) =     0.59
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.97

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      2.47   5.80    3.689  0.80( 0.16) 0.20     0.7    1041.00
      1      2.47   6.49    3.539  0.80( 0.16) 0.20     0.8    1031.00
      1      2.45   6.93    3.443  0.80( 0.16) 0.20     0.8    1021.00
      2      1.97   5.67    3.718  0.80( 0.16) 0.20     0.6    1051.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.40   5.67    3.718  0.80( 0.16) 0.20     1.3    1051.00
      2      4.42   5.80    3.689  0.80( 0.16) 0.20     1.3    1041.00
      3      4.34   6.49    3.539  0.80( 0.16) 0.20     1.3    1031.00
      4      4.26   6.93    3.443  0.80( 0.16) 0.20     1.4    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      4.42    Tc(MIN.) =     5.80
  EFFECTIVE AREA(ACRES) =     1.32   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.36
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1052.00 =   530.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1052.00 TO NODE   1062.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.32  DOWNSTREAM(FEET) =    26.74
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.19
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
```

```
  PIPE-FLOW(CFS) =      4.42
  PIPE TRAVEL TIME(MIN.) =   0.46    Tc(MIN.) =   6.27
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1062.00 =   647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1062.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.27
  RAINFALL INTENSITY(INCH/HR) =   3.59
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     1.32
  TOTAL STREAM AREA(ACRES) =     1.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.42

****************************************************************************
  FLOW PROCESS FROM NODE   1061.00 TO NODE   1061.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   166.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.46      0.80       0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.53
  TOTAL AREA(ACRES) =      0.46   PEAK FLOW RATE(CFS) =      1.53

****************************************************************************
  FLOW PROCESS FROM NODE   1061.00 TO NODE   1062.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.07  DOWNSTREAM(FEET) =    26.74
  FLOW LENGTH(FEET) =    66.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.23
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.53
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =   5.34
  LONGEST FLOWPATH FROM NODE   1061.00 TO NODE   1062.00 =   232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1062.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.34
  RAINFALL INTENSITY(INCH/HR) =   3.79
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
```

```
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.46
  TOTAL STREAM AREA(ACRES) =     0.46
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.53

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.40   6.13    3.617  0.80( 0.16) 0.20     1.3    1051.00
      1      4.42   6.27    3.587  0.80( 0.16) 0.20     1.3    1041.00
      1      4.34   6.95    3.438  0.80( 0.16) 0.20     1.3    1031.00
      1      4.26   7.42    3.336  0.80( 0.16) 0.20     1.4    1021.00
      2      1.53   5.34    3.790  0.80( 0.16) 0.20     0.5    1061.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.55   5.34    3.790  0.80( 0.16) 0.20     1.6    1061.00
      2      5.86   6.13    3.617  0.80( 0.16) 0.20     1.8    1051.00
      3      5.86   6.27    3.587  0.80( 0.16) 0.20     1.8    1041.00
      4      5.73   6.95    3.438  0.80( 0.16) 0.20     1.8    1031.00
      5      5.60   7.42    3.336  0.80( 0.16) 0.20     1.8    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      5.86    Tc(MIN.) =     6.27
  EFFECTIVE AREA(ACRES) =     1.78   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.82
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1062.00 =   647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1062.00 TO NODE   1072.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.74  DOWNSTREAM(FEET) =    26.59
  FLOW LENGTH(FEET) =    31.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.40
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      5.86
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =   6.38
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1072.00 =   678.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1072.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.38
  RAINFALL INTENSITY(INCH/HR) =   3.56
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     1.78
  TOTAL STREAM AREA(ACRES) =     1.82
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.86

****************************************************************************
```

```
  FLOW PROCESS FROM NODE   1071.00 TO NODE   1071.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    31.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.31      0.80       0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.03
  TOTAL AREA(ACRES) =      0.31   PEAK FLOW RATE(CFS) =      1.03

****************************************************************************
  FLOW PROCESS FROM NODE   1071.00 TO NODE   1072.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.71  DOWNSTREAM(FEET) =    26.59
  FLOW LENGTH(FEET) =    23.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.99
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.03
  PIPE TRAVEL TIME(MIN.) =   0.13    Tc(MIN.) =   5.13
  LONGEST FLOWPATH FROM NODE   1071.00 TO NODE   1072.00 =    54.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1072.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.13
  RAINFALL INTENSITY(INCH/HR) =   3.84
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.31
  TOTAL STREAM AREA(ACRES) =     0.31
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.03

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.55   5.46    3.764  0.80( 0.16) 0.20     1.6    1061.00
      1      5.86   6.25    3.591  0.80( 0.16) 0.20     1.8    1051.00
      1      5.86   6.38    3.562  0.80( 0.16) 0.20     1.8    1041.00
      1      5.73   7.07    3.412  0.80( 0.16) 0.20     1.8    1031.00
      1      5.60   7.53    3.310  0.80( 0.16) 0.20     1.8    1021.00
      2      1.03   5.13    3.836  0.80( 0.16) 0.20     0.3    1071.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
```

```
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      6.35   5.13    3.836  0.80( 0.16) 0.20     1.8    1071.00
     2      6.57   5.46    3.764  0.80( 0.16) 0.20     1.9    1061.00
     3      6.82   6.25    3.591  0.80( 0.16) 0.20     2.1    1051.00
     4      6.82   6.38    3.562  0.80( 0.16) 0.20     2.1    1041.00
     5      6.64   7.07    3.412  0.80( 0.16) 0.20     2.1    1031.00
     6      6.49   7.53    3.310  0.80( 0.16) 0.20     2.1    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      6.82    Tc(MIN.) =     6.38
  EFFECTIVE AREA(ACRES) =     2.09   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      2.13
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1072.00 =   678.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1072.00 TO NODE   1073.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.59  DOWNSTREAM(FEET) =    26.18
  FLOW LENGTH(FEET) =    83.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  14.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.52
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      6.82
  PIPE TRAVEL TIME(MIN.) =   0.31    Tc(MIN.) =   6.69
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      6.35   5.44    3.769  0.80( 0.16) 0.20     1.8    1071.00
     2      6.57   5.77    3.697  0.80( 0.16) 0.20     1.9    1061.00
     3      6.82   6.56    3.524  0.80( 0.16) 0.20     2.1    1051.00
     4      6.82   6.69    3.495  0.80( 0.16) 0.20     2.1    1041.00
     5      6.64   7.38    3.345  0.80( 0.16) 0.20     2.1    1031.00
     6      6.49   7.84    3.243  0.80( 0.16) 0.20     2.1    1021.00
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      1.19   5.22    3.816  0.80( 0.16) 0.20     0.4    1001.00
     2      1.20   5.26    3.808  0.80( 0.16) 0.20     0.4    1011.00
  LONGEST FLOWPATH FROM NODE   1011.00 TO NODE   1073.00 =   185.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
     1      7.38   5.22    3.816  0.80( 0.16) 0.20     2.1    1001.00
     2      7.41   5.26    3.808  0.80( 0.16) 0.20     2.1    1011.00
     3      7.54   5.44    3.769  0.80( 0.16) 0.20     2.2    1071.00
     4      7.73   5.77    3.697  0.80( 0.16) 0.20     2.3    1061.00
     5      7.93   6.56    3.524  0.80( 0.16) 0.20     2.4    1051.00
     6      7.92   6.69    3.495  0.80( 0.16) 0.20     2.4    1041.00
     7      7.69   7.38    3.345  0.80( 0.16) 0.20     2.5    1031.00
     8      7.50   7.84    3.243  0.80( 0.16) 0.20     2.5    1021.00
```

```
    TOTAL AREA(ACRES) =      2.49

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        7.93  Tc(MIN.) =    6.556
  EFFECTIVE AREA(ACRES) =      2.43  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      2.49
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1073.00 =   761.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1073.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1073.00 TO NODE   1082.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.98  DOWNSTREAM(FEET) =    25.47
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.77
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      7.93
  PIPE TRAVEL TIME(MIN.) =   0.37    Tc(MIN.) =   6.93
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1082.00 =   867.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1082.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.93
  RAINFALL INTENSITY(INCH/HR) =   3.44
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     2.43
  TOTAL STREAM AREA(ACRES) =     2.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.93

****************************************************************************
  FLOW PROCESS FROM NODE   1081.00 TO NODE   1081.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.61      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      2.03
  TOTAL AREA(ACRES) =      0.61   PEAK FLOW RATE(CFS) =      2.03

****************************************************************************
```

```
  FLOW PROCESS FROM NODE   1081.00 TO NODE   1082.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    28.41  DOWNSTREAM(FEET) =    25.47
  FLOW LENGTH(FEET) =    14.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.65
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      2.03
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   5.02
  LONGEST FLOWPATH FROM NODE   1081.00 TO NODE   1082.00 =   120.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1082.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.02
  RAINFALL INTENSITY(INCH/HR) =   3.86
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.61
  TOTAL STREAM AREA(ACRES) =     0.61
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.03

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      7.38   5.60    3.733  0.80( 0.16) 0.20     2.1    1001.00
      1      7.41   5.63    3.726  0.80( 0.16) 0.20     2.1    1011.00
      1      7.54   5.81    3.687  0.80( 0.16) 0.20     2.2    1071.00
      1      7.73   6.14    3.615  0.80( 0.16) 0.20     2.3    1061.00
      1      7.93   6.93    3.443  0.80( 0.16) 0.20     2.4    1051.00
      1      7.92   7.06    3.414  0.80( 0.16) 0.20     2.4    1041.00
      1      7.69   7.75    3.263  0.80( 0.16) 0.20     2.5    1031.00
      1      7.50   8.22    3.162  0.80( 0.16) 0.20     2.5    1021.00
      2      2.03   5.02    3.860  0.80( 0.16) 0.20     0.6    1081.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      8.88   5.02    3.860  0.80( 0.16) 0.20     2.5    1081.00
      2      9.34   5.60    3.733  0.80( 0.16) 0.20     2.7    1001.00
      3      9.37   5.63    3.726  0.80( 0.16) 0.20     2.7    1011.00
      4      9.48   5.81    3.687  0.80( 0.16) 0.20     2.8    1071.00
      5      9.63   6.14    3.615  0.80( 0.16) 0.20     2.9    1061.00
      6      9.73   6.93    3.443  0.80( 0.16) 0.20     3.0    1051.00
      7      9.71   7.06    3.414  0.80( 0.16) 0.20     3.1    1041.00
      8      9.40   7.75    3.263  0.80( 0.16) 0.20     3.1    1031.00
      9      9.15   8.22    3.162  0.80( 0.16) 0.20     3.1    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      9.73    Tc(MIN.) =     6.93
  EFFECTIVE AREA(ACRES) =     3.04   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
```

```
  TOTAL AREA(ACRES) =      3.10
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1082.00 =   867.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1082.00 TO NODE   1092.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.47  DOWNSTREAM(FEET) =    25.12
  FLOW LENGTH(FEET) =    68.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.08
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      9.73
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =   7.15
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1092.00 =   935.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1092.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   7.15
  RAINFALL INTENSITY(INCH/HR) =   3.39
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     3.04
  TOTAL STREAM AREA(ACRES) =     3.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.73

****************************************************************************
  FLOW PROCESS FROM NODE   1091.00 TO NODE   1091.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    68.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.42      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.40
  TOTAL AREA(ACRES) =      0.42   PEAK FLOW RATE(CFS) =      1.40

****************************************************************************
  FLOW PROCESS FROM NODE   1091.00 TO NODE   1092.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.31  DOWNSTREAM(FEET) =    25.12
  FLOW LENGTH(FEET) =    38.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.16
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.40
  PIPE TRAVEL TIME(MIN.) =   0.20    Tc(MIN.) =   5.20
```

```
  LONGEST FLOWPATH FROM NODE   1091.00 TO NODE   1092.00 =   106.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1092.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.20
  RAINFALL INTENSITY(INCH/HR) =   3.82
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.42
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.40

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      8.88   5.24    3.811  0.80( 0.16) 0.20     2.5    1081.00
      1      9.34   5.82    3.684  0.80( 0.16) 0.20     2.7    1001.00
      1      9.37   5.86    3.677  0.80( 0.16) 0.20     2.7    1011.00
      1      9.48   6.03    3.638  0.80( 0.16) 0.20     2.8    1071.00
      1      9.63   6.36    3.566  0.80( 0.16) 0.20     2.9    1061.00
      1      9.73   7.15    3.394  0.80( 0.16) 0.20     3.0    1051.00
      1      9.71   7.28    3.365  0.80( 0.16) 0.20     3.1    1041.00
      1      9.40   7.97    3.214  0.80( 0.16) 0.20     3.1    1031.00
      1      9.15   8.44    3.112  0.80( 0.16) 0.20     3.1    1021.00
      2      1.40   5.20    3.820  0.80( 0.16) 0.20     0.4    1091.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1     10.23   5.20    3.820  0.80( 0.16) 0.20     2.9    1091.00
      2     10.28   5.24    3.811  0.80( 0.16) 0.20     2.9    1081.00
      3     10.69   5.82    3.684  0.80( 0.16) 0.20     3.1    1001.00
      4     10.72   5.86    3.677  0.80( 0.16) 0.20     3.1    1011.00
      5     10.81   6.03    3.638  0.80( 0.16) 0.20     3.2    1071.00
      6     10.93   6.36    3.566  0.80( 0.16) 0.20     3.3    1061.00
      7     10.97   7.15    3.394  0.80( 0.16) 0.20     3.5    1051.00
      8     10.93   7.28    3.365  0.80( 0.16) 0.20     3.5    1041.00
      9     10.57   7.97    3.214  0.80( 0.16) 0.20     3.5    1031.00
     10     10.28   8.44    3.112  0.80( 0.16) 0.20     3.5    1021.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     10.97    Tc(MIN.) =     7.15
  EFFECTIVE AREA(ACRES) =     3.46   AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      3.52
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1092.00 =   935.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1092.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    25.12  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =    88.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  14.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.36
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     10.97
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =   7.42
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   157.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.43      0.80       0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.43
  TOTAL AREA(ACRES) =      0.43   PEAK FLOW RATE(CFS) =      1.43

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1112.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    27.61  DOWNSTREAM(FEET) =    26.26
  FLOW LENGTH(FEET) =   274.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.16
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.43
  PIPE TRAVEL TIME(MIN.) =   1.45    Tc(MIN.) =   6.45
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1112.00 =   431.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1112.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   6.45
  RAINFALL INTENSITY(INCH/HR) =   3.55
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.43
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.43

****************************************************************************
  FLOW PROCESS FROM NODE   1111.00 TO NODE   1111.00 IS CODE =  22
----------------------------------------------------------------------------
```

```
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
==============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   274.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.87      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      2.90
  TOTAL AREA(ACRES) =      0.87   PEAK FLOW RATE(CFS) =      2.90

****************************************************************************
  FLOW PROCESS FROM NODE   1111.00 TO NODE   1112.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.56  DOWNSTREAM(FEET) =    26.26
  FLOW LENGTH(FEET) =    17.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.07
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      2.90
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   5.05
  LONGEST FLOWPATH FROM NODE   1111.00 TO NODE   1112.00 =   291.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1112.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   5.05
  RAINFALL INTENSITY(INCH/HR) =   3.85
  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80
  AREA-AVERAGED Ap =  0.20
  EFFECTIVE STREAM AREA(ACRES) =     0.87
  TOTAL STREAM AREA(ACRES) =     0.87
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.90

  ** CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.43   6.45    3.548  0.80( 0.16) 0.20     0.4    1101.00
      2      2.90   5.05    3.854  0.80( 0.16) 0.20     0.9    1111.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.12   5.05    3.854  0.80( 0.16) 0.20     1.2    1111.00
      2      4.09   6.45    3.548  0.80( 0.16) 0.20     1.3    1101.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      4.12    Tc(MIN.) =     5.05
  EFFECTIVE AREA(ACRES) =     1.21   AREA-AVERAGED Fm(INCH/HR) =  0.16
```

```
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.30
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1112.00 =   431.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1112.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.06  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =   284.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.99
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      4.12
  PIPE TRAVEL TIME(MIN.) =   1.19    Tc(MIN.) =   6.23
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1121.00 TO NODE   1121.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   284.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.43      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      1.43
  TOTAL AREA(ACRES) =      0.43   PEAK FLOW RATE(CFS) =      1.43

****************************************************************************
  FLOW PROCESS FROM NODE   1121.00 TO NODE   1122.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    26.13  DOWNSTREAM(FEET) =    24.66
  FLOW LENGTH(FEET) =    31.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.28
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.43
  PIPE TRAVEL TIME(MIN.) =   0.07    Tc(MIN.) =   5.07
  LONGEST FLOWPATH FROM NODE   1121.00 TO NODE   1122.00 =   315.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================
```

```
  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      1.43   5.07    3.848  0.80( 0.16) 0.20     0.4    1121.00
  LONGEST FLOWPATH FROM NODE   1121.00 TO NODE   1122.00 =   315.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      4.12   6.23    3.595  0.80( 0.16) 0.20     1.2    1111.00
      2      4.09   7.63    3.289  0.80( 0.16) 0.20     1.3    1101.00
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.04   5.07    3.848  0.80( 0.16) 0.20     1.4    1121.00
      2      5.46   6.23    3.595  0.80( 0.16) 0.20     1.6    1111.00
      3      5.31   7.63    3.289  0.80( 0.16) 0.20     1.7    1101.00
    TOTAL AREA(ACRES) =      1.73

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =        5.46  Tc(MIN.) =    6.232
  EFFECTIVE AREA(ACRES) =      1.64  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      1.73
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1      5.04   5.07    3.848  0.80( 0.16) 0.20     1.4    1121.00
      2      5.46   6.23    3.595  0.80( 0.16) 0.20     1.6    1111.00
      3      5.31   7.63    3.289  0.80( 0.16) 0.20     1.7    1101.00
  LONGEST FLOWPATH FROM NODE   1101.00 TO NODE   1122.00 =   715.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1     10.23   5.49    3.758  0.80( 0.16) 0.20     2.9    1091.00
      2     10.28   5.53    3.748  0.80( 0.16) 0.20     2.9    1081.00
      3     10.69   6.11    3.622  0.80( 0.16) 0.20     3.1    1001.00
      4     10.72   6.14    3.615  0.80( 0.16) 0.20     3.1    1011.00
      5     10.81   6.32    3.576  0.80( 0.16) 0.20     3.2    1071.00
      6     10.93   6.64    3.507  0.80( 0.16) 0.20     3.3    1061.00
      7     10.97   7.42    3.335  0.80( 0.16) 0.20     3.5    1051.00
      8     10.93   7.56    3.305  0.80( 0.16) 0.20     3.5    1041.00
      9     10.57   8.26    3.152  0.80( 0.16) 0.20     3.5    1031.00
     10     10.28   8.73    3.050  0.80( 0.16) 0.20     3.5    1021.00
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM     Q     Tc   Intensity   Fp(Fm)     Ap   Ae     HEADWATER
```

```
   NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)       (ACRES)    NODE
      1     14.73   5.07    3.848  0.80( 0.16) 0.20     4.1    1121.00
      2     15.42   5.49    3.758  0.80( 0.16) 0.20     4.4    1091.00
      3     15.48   5.53    3.748  0.80( 0.16) 0.20     4.4    1081.00
      4     16.10   6.11    3.622  0.80( 0.16) 0.20     4.7    1001.00
      5     16.14   6.14    3.615  0.80( 0.16) 0.20     4.8    1011.00
      6     16.23   6.23    3.595  0.80( 0.16) 0.20     4.8    1111.00
      7     16.26   6.32    3.576  0.80( 0.16) 0.20     4.8    1071.00
      8     16.35   6.64    3.507  0.80( 0.16) 0.20     5.0    1061.00
      9     16.30   7.42    3.335  0.80( 0.16) 0.20     5.2    1051.00
     10     16.25   7.56    3.305  0.80( 0.16) 0.20     5.2    1041.00
     11     16.21   7.63    3.289  0.80( 0.16) 0.20     5.2    1101.00
     12     15.64   8.26    3.152  0.80( 0.16) 0.20     5.2    1031.00
     13     15.19   8.73    3.050  0.80( 0.16) 0.20     5.2    1021.00
    TOTAL AREA(ACRES) =      5.25

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       16.35  Tc(MIN.) =    6.636
  EFFECTIVE AREA(ACRES) =      4.96  AREA-AVERAGED Fm(INCH/HR) =  0.16
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.20
  TOTAL AREA(ACRES) =      5.25
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1122.00 =  1023.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1122.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   1122.00 TO NODE   1123.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    24.46  DOWNSTREAM(FEET) =    24.34
  FLOW LENGTH(FEET) =    33.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  20.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.06
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     16.35
  PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =   6.75
  LONGEST FLOWPATH FROM NODE   1021.00 TO NODE   1123.00 =  1056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1123.00 TO NODE   1123.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   2001.00 TO NODE   2001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    33.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A       0.22      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
```

```
  SUBAREA RUNOFF(CFS) =      0.73
  TOTAL AREA(ACRES) =      0.22   PEAK FLOW RATE(CFS) =      0.73

****************************************************************************
  FLOW PROCESS FROM NODE   2001.00 TO NODE   2001.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3001.00 TO NODE   3001.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>>>>USE SPECIFIED Tc VALUE FOR INITIAL SUBAREA<<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  3300.00
  USER SPECIFIED Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  APARTMENTS                 A        0.27      0.80      0.20    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.20
  SUBAREA RUNOFF(CFS) =      0.90
  TOTAL AREA(ACRES) =      0.27   PEAK FLOW RATE(CFS) =      0.90

****************************************************************************
  FLOW PROCESS FROM NODE   3001.00 TO NODE   3001.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      0.01  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.01  AREA-AVERAGED Fm(INCH/HR)=  0.00
  AREA-AVERAGED Fp(INCH/HR) =  0.00  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)   =      1.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

Technical Appendix C

Hydrologic Analysis
Proposed Condition – Flood Hydrograph

```
_____________________________________________________________________________
*****************************************************************************
           NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                     AND LOW LOSS FRACTION ESTIMATIONS
=============================================================================
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                            Analysis prepared by:

                            DRC Engineering, Inc.
                   160 South Old Springs Road, Suite 210
                      Anaheim Hills, California 92808
                   Tel: 714-685-6860 * Fax: 714-685-6801

*****************************************************************************
-----------------------------------------------------------------------------

 Problem Descriptions:
  RESIDENCE AT CASA LOMA - REDLANDS
  PROPOSED CONDITION
  HYDROLOGIC ANALYSIS - 10-YEAR
=============================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC II:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     3.22 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1          5.25       20.00            32.       0.975       0.742

    TOTAL AREA (Acres) =      5.25

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.195

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.258
=============================================================================
```

```
****************************************************************************

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                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 *************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AS CASA LOMA - REDLANDS                                        *
* PROPOSED CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 10-YEAR                                            *
 ***************************************************************************

  FILE NAME: 1803P010.FLD
  TIME/DATE OF STUDY: 18:00 03/14/2018

   The Small Area Unit Hydrograph Procedures in Section J
   of the Hydrology Manual provides estimates of runoff
   hydrograph and runoff volume for watersheds whose time of
   concentration is less than 25 minutes. The PROGRAM User
   should check the applicability of using the small area unit
   hydrograph procedures, and follow the guidelines in
   Sections J and K.5 in complex watershed modeling.


****************************************************************************
  FLOW PROCESS FROM NODE   1000.00 TO NODE   1123.00 IS CODE = 1.2
----------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<
============================================================================

  (SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

    RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
    TOTAL CATCHMENT AREA(ACRES) =    5.25
    SOIL-LOSS RATE, Fm,(INCH/HR) =  0.195
    LOW LOSS FRACTION = 0.258
    TIME OF CONCENTRATION(MIN.) =  6.98
    SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
    USER SPECIFIED RAINFALL VALUES ARE USED:
    RETURN FREQUENCY(YEARS) =  10
       5-MINUTE POINT RAINFALL VALUE(INCHES) =  0.20
      30-MINUTE POINT RAINFALL VALUE(INCHES) =  0.52
       1-HOUR   POINT RAINFALL VALUE(INCHES) =  0.75
       3-HOUR   POINT RAINFALL VALUE(INCHES) =  1.27
       6-HOUR   POINT RAINFALL VALUE(INCHES) =  1.76
      24-HOUR   POINT RAINFALL VALUE(INCHES) =  3.22

----------------------------------------------------------------------------
    TOTAL CATCHMENT   RUNOFF  VOLUME(ACRE-FEET) =     0.95
    TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) =     0.46

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                      2 4 - H O U R    S T O R M
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R U N O F F H Y D R O G R A P H

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	2.2	4.4	6.6	8.9
0.017	0.0000	0.03	Q	.	.	.	.
0.033	0.0002	0.08	Q	.	.	.	.
0.050	0.0003	0.14	Q	.	.	.	.
0.067	0.0006	0.19	Q	.	.	.	.
0.083	0.0009	0.21	Q	.	.	.	.
0.100	0.0012	0.21	Q	.	.	.	.
0.117	0.0014	0.21	Q	.	.	.	.
0.133	0.0017	0.21	Q	.	.	.	.
0.150	0.0020	0.21	Q	.	.	.	.
0.167	0.0023	0.21	Q	.	.	.	.
0.183	0.0026	0.21	Q	.	.	.	.
0.200	0.0029	0.21	Q	.	.	.	.
0.217	0.0031	0.21	Q	.	.	.	.
0.233	0.0034	0.21	Q	.	.	.	.
0.250	0.0037	0.21	Q	.	.	.	.
0.267	0.0040	0.21	Q	.	.	.	.
0.283	0.0043	0.21	Q	.	.	.	.
0.300	0.0046	0.21	Q	.	.	.	.
0.317	0.0049	0.21	Q	.	.	.	.
0.333	0.0051	0.21	Q	.	.	.	.
0.350	0.0054	0.21	Q	.	.	.	.
0.367	0.0057	0.21	Q	.	.	.	.
0.383	0.0060	0.21	Q	.	.	.	.
0.400	0.0063	0.21	Q	.	.	.	.
0.417	0.0066	0.21	Q	.	.	.	.
0.433	0.0068	0.21	Q	.	.	.	.
0.450	0.0071	0.21	Q	.	.	.	.
0.467	0.0074	0.21	Q	.	.	.	.
0.483	0.0077	0.21	Q	.	.	.	.
0.500	0.0080	0.21	Q	.	.	.	.
0.517	0.0083	0.21	Q	.	.	.	.
0.533	0.0086	0.21	Q	.	.	.	.
0.550	0.0089	0.21	Q	.	.	.	.
0.567	0.0091	0.21	Q	.	.	.	.
0.583	0.0094	0.21	Q	.	.	.	.
0.600	0.0097	0.21	Q	.	.	.	.
0.617	0.0100	0.21	Q	.	.	.	.
0.633	0.0103	0.21	Q	.	.	.	.
0.650	0.0106	0.21	Q	.	.	.	.
0.667	0.0109	0.21	Q	.	.	.	.
0.683	0.0112	0.21	Q	.	.	.	.
0.700	0.0114	0.21	Q	.	.	.	.
0.717	0.0117	0.21	Q	.	.	.	.
0.733	0.0120	0.21	Q	.	.	.	.
0.750	0.0123	0.21	Q	.	.	.	.
0.767	0.0126	0.21	Q	.	.	.	.
0.783	0.0129	0.21	Q	.	.	.	.
0.800	0.0132	0.21	Q	.	.	.	.
0.817	0.0135	0.21	Q	.	.	.	.
0.833	0.0138	0.21	Q	.	.	.	.
0.850	0.0140	0.21	Q	.	.	.	.
0.867	0.0143	0.21	Q	.	.	.	.
0.883	0.0146	0.21	Q	.	.	.	.
0.900	0.0149	0.21	Q	.	.	.	.
0.917	0.0152	0.21	Q	.	.	.	.

0.933	0.0155	0.21	Q	.	.	.	.
0.950	0.0158	0.21	Q	.	.	.	.
0.967	0.0161	0.21	Q	.	.	.	.
0.983	0.0164	0.21	Q	.	.	.	.
1.000	0.0167	0.21	Q	.	.	.	.
1.017	0.0170	0.21	Q	.	.	.	.
1.033	0.0172	0.21	Q	.	.	.	.
1.050	0.0175	0.21	Q	.	.	.	.
1.067	0.0178	0.21	Q	.	.	.	.
1.083	0.0181	0.21	Q	.	.	.	.
1.100	0.0184	0.21	Q	.	.	.	.
1.117	0.0187	0.21	Q	.	.	.	.
1.133	0.0190	0.21	Q	.	.	.	.
1.150	0.0193	0.21	Q	.	.	.	.
1.167	0.0196	0.21	Q	.	.	.	.
1.183	0.0199	0.21	Q	.	.	.	.
1.200	0.0202	0.21	Q	.	.	.	.
1.217	0.0205	0.21	Q	.	.	.	.
1.233	0.0208	0.21	Q	.	.	.	.
1.250	0.0211	0.21	Q	.	.	.	.
1.267	0.0214	0.21	Q	.	.	.	.
1.283	0.0216	0.21	Q	.	.	.	.
1.300	0.0219	0.21	Q	.	.	.	.
1.317	0.0222	0.21	Q	.	.	.	.
1.333	0.0225	0.21	Q	.	.	.	.
1.350	0.0228	0.21	Q	.	.	.	.
1.367	0.0231	0.21	Q	.	.	.	.
1.383	0.0234	0.21	Q	.	.	.	.
1.400	0.0237	0.21	Q	.	.	.	.
1.417	0.0240	0.22	QV	.	.	.	.
1.433	0.0243	0.22	QV	.	.	.	.
1.450	0.0246	0.22	QV	.	.	.	.
1.467	0.0249	0.22	QV	.	.	.	.
1.483	0.0252	0.22	QV	.	.	.	.
1.500	0.0255	0.22	QV	.	.	.	.
1.517	0.0258	0.22	QV	.	.	.	.
1.533	0.0261	0.22	QV	.	.	.	.
1.550	0.0264	0.22	QV	.	.	.	.
1.567	0.0267	0.22	QV	.	.	.	.
1.583	0.0270	0.22	QV	.	.	.	.
1.600	0.0273	0.22	QV	.	.	.	.
1.617	0.0276	0.22	QV	.	.	.	.
1.633	0.0279	0.22	QV	.	.	.	.
1.650	0.0282	0.22	QV	.	.	.	.
1.667	0.0285	0.22	QV	.	.	.	.
1.683	0.0288	0.22	QV	.	.	.	.
1.700	0.0291	0.22	QV	.	.	.	.
1.717	0.0294	0.22	QV	.	.	.	.
1.733	0.0297	0.22	QV	.	.	.	.
1.750	0.0300	0.22	QV	.	.	.	.
1.767	0.0303	0.22	QV	.	.	.	.
1.783	0.0306	0.22	QV	.	.	.	.
1.800	0.0309	0.22	QV	.	.	.	.
1.817	0.0312	0.22	QV	.	.	.	.
1.833	0.0315	0.22	QV	.	.	.	.
1.850	0.0318	0.22	QV	.	.	.	.
1.867	0.0321	0.22	QV	.	.	.	.
1.883	0.0324	0.22	QV	.	.	.	.
1.900	0.0327	0.22	QV	.	.	.	.
1.917	0.0330	0.22	QV	.	.	.	.
1.933	0.0333	0.22	QV	.	.	.	.
1.950	0.0336	0.22	QV	.	.	.	.
1.967	0.0339	0.22	QV	.	.	.	.
1.983	0.0342	0.22	QV	.	.	.	.
2.000	0.0345	0.22	QV	.	.	.	.

2.017	0.0348	0.22	QV	.	.	.	.
2.033	0.0351	0.22	QV	.	.	.	.
2.050	0.0354	0.22	QV	.	.	.	.
2.067	0.0357	0.22	QV	.	.	.	.
2.083	0.0360	0.22	QV	.	.	.	.
2.100	0.0363	0.22	QV	.	.	.	.
2.117	0.0366	0.22	QV	.	.	.	.
2.133	0.0369	0.22	QV	.	.	.	.
2.150	0.0372	0.22	.Q	.	.	.	.
2.167	0.0375	0.22	.Q	.	.	.	.
2.183	0.0379	0.22	.Q	.	.	.	.
2.200	0.0382	0.22	.Q	.	.	.	.
2.217	0.0385	0.22	.Q	.	.	.	.
2.233	0.0388	0.22	.Q	.	.	.	.
2.250	0.0391	0.22	.Q	.	.	.	.
2.267	0.0394	0.22	.Q	.	.	.	.
2.283	0.0397	0.22	.Q	.	.	.	.
2.300	0.0400	0.22	.Q	.	.	.	.
2.317	0.0403	0.22	.Q	.	.	.	.
2.333	0.0406	0.22	.Q	.	.	.	.
2.350	0.0409	0.22	.Q	.	.	.	.
2.367	0.0412	0.22	.Q	.	.	.	.
2.383	0.0415	0.22	.Q	.	.	.	.
2.400	0.0418	0.22	.Q	.	.	.	.
2.417	0.0422	0.22	.Q	.	.	.	.
2.433	0.0425	0.22	.Q	.	.	.	.
2.450	0.0428	0.22	.Q	.	.	.	.
2.467	0.0431	0.22	.Q	.	.	.	.
2.483	0.0434	0.22	.Q	.	.	.	.
2.500	0.0437	0.22	.Q	.	.	.	.
2.517	0.0440	0.22	.Q	.	.	.	.
2.533	0.0443	0.22	.Q	.	.	.	.
2.550	0.0446	0.23	.Q	.	.	.	.
2.567	0.0449	0.23	.Q	.	.	.	.
2.583	0.0452	0.23	.Q	.	.	.	.
2.600	0.0456	0.23	.Q	.	.	.	.
2.617	0.0459	0.23	.Q	.	.	.	.
2.633	0.0462	0.23	.Q	.	.	.	.
2.650	0.0465	0.23	.Q	.	.	.	.
2.667	0.0468	0.23	.Q	.	.	.	.
2.683	0.0471	0.23	.Q	.	.	.	.
2.700	0.0474	0.23	.Q	.	.	.	.
2.717	0.0477	0.23	.QV	.	.	.	.
2.733	0.0480	0.23	.QV	.	.	.	.
2.750	0.0484	0.23	.QV	.	.	.	.
2.767	0.0487	0.23	.QV	.	.	.	.
2.783	0.0490	0.23	.QV	.	.	.	.
2.800	0.0493	0.23	.QV	.	.	.	.
2.817	0.0496	0.23	.QV	.	.	.	.
2.833	0.0499	0.23	.QV	.	.	.	.
2.850	0.0502	0.23	.QV	.	.	.	.
2.867	0.0506	0.23	.QV	.	.	.	.
2.883	0.0509	0.23	.QV	.	.	.	.
2.900	0.0512	0.23	.QV	.	.	.	.
2.917	0.0515	0.23	.QV	.	.	.	.
2.933	0.0518	0.23	.QV	.	.	.	.
2.950	0.0521	0.23	.QV	.	.	.	.
2.967	0.0524	0.23	.QV	.	.	.	.
2.983	0.0528	0.23	.QV	.	.	.	.
3.000	0.0531	0.23	.QV	.	.	.	.
3.017	0.0534	0.23	.QV	.	.	.	.
3.033	0.0537	0.23	.QV	.	.	.	.
3.050	0.0540	0.23	.QV	.	.	.	.
3.067	0.0543	0.23	.QV	.	.	.	.
3.083	0.0547	0.23	.QV	.	.	.	.

3.100	0.0550	0.23	.QV	.	.	.	.
3.117	0.0553	0.23	.QV	.	.	.	.
3.133	0.0556	0.23	.QV	.	.	.	.
3.150	0.0559	0.23	.QV	.	.	.	.
3.167	0.0563	0.23	.QV	.	.	.	.
3.183	0.0566	0.23	.QV	.	.	.	.
3.200	0.0569	0.23	.QV	.	.	.	.
3.217	0.0572	0.23	.QV	.	.	.	.
3.233	0.0575	0.23	.QV	.	.	.	.
3.250	0.0578	0.23	.QV	.	.	.	.
3.267	0.0582	0.23	.QV	.	.	.	.
3.283	0.0585	0.23	.QV	.	.	.	.
3.300	0.0588	0.23	.QV	.	.	.	.
3.317	0.0591	0.23	.QV	.	.	.	.
3.333	0.0594	0.23	.QV	.	.	.	.
3.350	0.0598	0.23	.QV	.	.	.	.
3.367	0.0601	0.23	.QV	.	.	.	.
3.383	0.0604	0.23	.QV	.	.	.	.
3.400	0.0607	0.23	.QV	.	.	.	.
3.417	0.0611	0.23	.QV	.	.	.	.
3.433	0.0614	0.23	.QV	.	.	.	.
3.450	0.0617	0.23	.QV	.	.	.	.
3.467	0.0620	0.23	.QV	.	.	.	.
3.483	0.0623	0.23	.QV	.	.	.	.
3.500	0.0627	0.23	.QV	.	.	.	.
3.517	0.0630	0.23	.QV	.	.	.	.
3.533	0.0633	0.23	.QV	.	.	.	.
3.550	0.0636	0.24	.QV	.	.	.	.
3.567	0.0640	0.24	.QV	.	.	.	.
3.583	0.0643	0.24	.QV	.	.	.	.
3.600	0.0646	0.24	.QV	.	.	.	.
3.617	0.0649	0.24	.QV	.	.	.	.
3.633	0.0653	0.24	.QV	.	.	.	.
3.650	0.0656	0.24	.QV	.	.	.	.
3.667	0.0659	0.24	.QV	.	.	.	.
3.683	0.0662	0.24	.QV	.	.	.	.
3.700	0.0666	0.24	.QV	.	.	.	.
3.717	0.0669	0.24	.QV	.	.	.	.
3.733	0.0672	0.24	.QV	.	.	.	.
3.750	0.0675	0.24	.QV	.	.	.	.
3.767	0.0679	0.24	.QV	.	.	.	.
3.783	0.0682	0.24	.QV	.	.	.	.
3.800	0.0685	0.24	.QV	.	.	.	.
3.817	0.0688	0.24	.QV	.	.	.	.
3.833	0.0692	0.24	.QV	.	.	.	.
3.850	0.0695	0.24	.QV	.	.	.	.
3.867	0.0698	0.24	.QV	.	.	.	.
3.883	0.0702	0.24	.QV	.	.	.	.
3.900	0.0705	0.24	.QV	.	.	.	.
3.917	0.0708	0.24	.QV	.	.	.	.
3.933	0.0711	0.24	.QV	.	.	.	.
3.950	0.0715	0.24	.Q V	.	.	.	.
3.967	0.0718	0.24	.Q V	.	.	.	.
3.983	0.0721	0.24	.Q V	.	.	.	.
4.000	0.0725	0.24	.Q V	.	.	.	.
4.017	0.0728	0.24	.Q V	.	.	.	.
4.033	0.0731	0.24	.Q V	.	.	.	.
4.050	0.0735	0.24	.Q V	.	.	.	.
4.067	0.0738	0.24	.Q V	.	.	.	.
4.083	0.0741	0.24	.Q V	.	.	.	.
4.100	0.0745	0.24	.Q V	.	.	.	.
4.117	0.0748	0.24	.Q V	.	.	.	.
4.133	0.0751	0.24	.Q V	.	.	.	.
4.150	0.0755	0.24	.Q V	.	.	.	.
4.167	0.0758	0.24	.Q V	.	.	.	.

4.183	0.0761	0.24	.Q V	.	.	.	.
4.200	0.0765	0.24	.Q V	.	.	.	.
4.217	0.0768	0.24	.Q V	.	.	.	.
4.233	0.0771	0.24	.Q V	.	.	.	.
4.250	0.0775	0.24	.Q V	.	.	.	.
4.267	0.0778	0.24	.Q V	.	.	.	.
4.283	0.0781	0.24	.Q V	.	.	.	.
4.300	0.0785	0.24	.Q V	.	.	.	.
4.317	0.0788	0.24	.Q V	.	.	.	.
4.333	0.0791	0.24	.Q V	.	.	.	.
4.350	0.0795	0.24	.Q V	.	.	.	.
4.367	0.0798	0.24	.Q V	.	.	.	.
4.383	0.0801	0.24	.Q V	.	.	.	.
4.400	0.0805	0.24	.Q V	.	.	.	.
4.417	0.0808	0.24	.Q V	.	.	.	.
4.433	0.0812	0.24	.Q V	.	.	.	.
4.450	0.0815	0.25	.Q V	.	.	.	.
4.467	0.0818	0.25	.Q V	.	.	.	.
4.483	0.0822	0.25	.Q V	.	.	.	.
4.500	0.0825	0.25	.Q V	.	.	.	.
4.517	0.0828	0.25	.Q V	.	.	.	.
4.533	0.0832	0.25	.Q V	.	.	.	.
4.550	0.0835	0.25	.Q V	.	.	.	.
4.567	0.0839	0.25	.Q V	.	.	.	.
4.583	0.0842	0.25	.Q V	.	.	.	.
4.600	0.0845	0.25	.Q V	.	.	.	.
4.617	0.0849	0.25	.Q V	.	.	.	.
4.633	0.0852	0.25	.Q V	.	.	.	.
4.650	0.0856	0.25	.Q V	.	.	.	.
4.667	0.0859	0.25	.Q V	.	.	.	.
4.683	0.0862	0.25	.Q V	.	.	.	.
4.700	0.0866	0.25	.Q V	.	.	.	.
4.717	0.0869	0.25	.Q V	.	.	.	.
4.733	0.0873	0.25	.Q V	.	.	.	.
4.750	0.0876	0.25	.Q V	.	.	.	.
4.767	0.0880	0.25	.Q V	.	.	.	.
4.783	0.0883	0.25	.Q V	.	.	.	.
4.800	0.0886	0.25	.Q V	.	.	.	.
4.817	0.0890	0.25	.Q V	.	.	.	.
4.833	0.0893	0.25	.Q V	.	.	.	.
4.850	0.0897	0.25	.Q V	.	.	.	.
4.867	0.0900	0.25	.Q V	.	.	.	.
4.883	0.0904	0.25	.Q V	.	.	.	.
4.900	0.0907	0.25	.Q V	.	.	.	.
4.917	0.0911	0.25	.Q V	.	.	.	.
4.933	0.0914	0.25	.Q V	.	.	.	.
4.950	0.0917	0.25	.Q V	.	.	.	.
4.967	0.0921	0.25	.Q V	.	.	.	.
4.983	0.0924	0.25	.Q V	.	.	.	.
5.000	0.0928	0.25	.Q V	.	.	.	.
5.017	0.0931	0.25	.Q V	.	.	.	.
5.033	0.0935	0.25	.Q V	.	.	.	.
5.050	0.0938	0.25	.Q V	.	.	.	.
5.067	0.0942	0.25	.Q V	.	.	.	.
5.083	0.0945	0.25	.Q V	.	.	.	.
5.100	0.0949	0.25	.Q V	.	.	.	.
5.117	0.0952	0.25	.Q V	.	.	.	.
5.133	0.0956	0.25	.Q V	.	.	.	.
5.150	0.0959	0.25	.Q V	.	.	.	.
5.167	0.0963	0.25	.Q V	.	.	.	.
5.183	0.0966	0.25	.Q V	.	.	.	.
5.200	0.0970	0.25	.Q V	.	.	.	.
5.217	0.0973	0.25	.Q V	.	.	.	.
5.233	0.0977	0.25	.Q V	.	.	.	.
5.250	0.0980	0.26	.Q V	.	.	.	.

5.267	0.0984	0.26	.Q	V	.	.	.	.
5.283	0.0987	0.26	.Q	V	.	.	.	.
5.300	0.0991	0.26	.Q	V	.	.	.	.
5.317	0.0994	0.26	.Q	V	.	.	.	.
5.333	0.0998	0.26	.Q	V	.	.	.	.
5.350	0.1001	0.26	.Q	V	.	.	.	.
5.367	0.1005	0.26	.Q	V	.	.	.	.
5.383	0.1008	0.26	.Q	V	.	.	.	.
5.400	0.1012	0.26	.Q	V	.	.	.	.
5.417	0.1016	0.26	.Q	V	.	.	.	.
5.433	0.1019	0.26	.Q	V	.	.	.	.
5.450	0.1023	0.26	.Q	V	.	.	.	.
5.467	0.1026	0.26	.Q	V	.	.	.	.
5.483	0.1030	0.26	.Q	V	.	.	.	.
5.500	0.1033	0.26	.Q	V	.	.	.	.
5.517	0.1037	0.26	.Q	V	.	.	.	.
5.533	0.1040	0.26	.Q	V	.	.	.	.
5.550	0.1044	0.26	.Q	V	.	.	.	.
5.567	0.1048	0.26	.Q	V	.	.	.	.
5.583	0.1051	0.26	.Q	V	.	.	.	.
5.600	0.1055	0.26	.Q	V	.	.	.	.
5.617	0.1058	0.26	.Q	V	.	.	.	.
5.633	0.1062	0.26	.Q	V	.	.	.	.
5.650	0.1066	0.26	.Q	V	.	.	.	.
5.667	0.1069	0.26	.Q	V	.	.	.	.
5.683	0.1073	0.26	.Q	V	.	.	.	.
5.700	0.1076	0.26	.Q	V	.	.	.	.
5.717	0.1080	0.26	.Q	V	.	.	.	.
5.733	0.1084	0.26	.Q	V	.	.	.	.
5.750	0.1087	0.26	.Q	V	.	.	.	.
5.767	0.1091	0.26	.Q	V	.	.	.	.
5.783	0.1094	0.26	.Q	V	.	.	.	.
5.800	0.1098	0.26	.Q	V	.	.	.	.
5.817	0.1102	0.26	.Q	V	.	.	.	.
5.833	0.1105	0.26	.Q	V	.	.	.	.
5.850	0.1109	0.26	.Q	V	.	.	.	.
5.867	0.1112	0.26	.Q	V	.	.	.	.
5.883	0.1116	0.26	.Q	V	.	.	.	.
5.900	0.1120	0.26	.Q	V	.	.	.	.
5.917	0.1123	0.26	.Q	V	.	.	.	.
5.933	0.1127	0.26	.Q	V	.	.	.	.
5.950	0.1131	0.26	.Q	V	.	.	.	.
5.967	0.1134	0.27	.Q	V	.	.	.	.
5.983	0.1138	0.27	.Q	V	.	.	.	.
6.000	0.1142	0.27	.Q	V	.	.	.	.
6.017	0.1145	0.27	.Q	V	.	.	.	.
6.033	0.1149	0.27	.Q	V	.	.	.	.
6.050	0.1153	0.27	.Q	V	.	.	.	.
6.067	0.1156	0.27	.Q	V	.	.	.	.
6.083	0.1160	0.27	.Q	V	.	.	.	.
6.100	0.1164	0.27	.Q	V	.	.	.	.
6.117	0.1167	0.27	.Q	V	.	.	.	.
6.133	0.1171	0.27	.Q	V	.	.	.	.
6.150	0.1175	0.27	.Q	V	.	.	.	.
6.167	0.1178	0.27	.Q	V	.	.	.	.
6.183	0.1182	0.27	.Q	V	.	.	.	.
6.200	0.1186	0.27	.Q	V	.	.	.	.
6.217	0.1190	0.27	.Q	V	.	.	.	.
6.233	0.1193	0.27	.Q	V	.	.	.	.
6.250	0.1197	0.27	.Q	V	.	.	.	.
6.267	0.1201	0.27	.Q	V	.	.	.	.
6.283	0.1204	0.27	.Q	V	.	.	.	.
6.300	0.1208	0.27	.Q	V	.	.	.	.
6.317	0.1212	0.27	.Q	V	.	.	.	.
6.333	0.1216	0.27	.Q	V	.	.	.	.

6.350	0.1219	0.27	.Q	V	.	.	.	.
6.367	0.1223	0.27	.Q	V	.	.	.	.
6.383	0.1227	0.27	.Q	V	.	.	.	.
6.400	0.1231	0.27	.Q	V	.	.	.	.
6.417	0.1234	0.27	.Q	V	.	.	.	.
6.433	0.1238	0.27	.Q	V	.	.	.	.
6.450	0.1242	0.27	.Q	V	.	.	.	.
6.467	0.1246	0.27	.Q	V	.	.	.	.
6.483	0.1249	0.27	.Q	V	.	.	.	.
6.500	0.1253	0.27	.Q	V	.	.	.	.
6.517	0.1257	0.27	.Q	V	.	.	.	.
6.533	0.1261	0.27	.Q	V	.	.	.	.
6.550	0.1264	0.27	.Q	V	.	.	.	.
6.567	0.1268	0.27	.Q	V	.	.	.	.
6.583	0.1272	0.27	.Q	V	.	.	.	.
6.600	0.1276	0.28	.Q	V	.	.	.	.
6.617	0.1280	0.28	.Q	V	.	.	.	.
6.633	0.1283	0.28	.Q	V	.	.	.	.
6.650	0.1287	0.28	.Q	V	.	.	.	.
6.667	0.1291	0.28	.Q	V	.	.	.	.
6.683	0.1295	0.28	.Q	V	.	.	.	.
6.700	0.1299	0.28	.Q	V	.	.	.	.
6.717	0.1302	0.28	.Q	V	.	.	.	.
6.733	0.1306	0.28	.Q	V	.	.	.	.
6.750	0.1310	0.28	.Q	V	.	.	.	.
6.767	0.1314	0.28	.Q	V	.	.	.	.
6.783	0.1318	0.28	.Q	V	.	.	.	.
6.800	0.1321	0.28	.Q	V	.	.	.	.
6.817	0.1325	0.28	.Q	V	.	.	.	.
6.833	0.1329	0.28	.Q	V	.	.	.	.
6.850	0.1333	0.28	.Q	V	.	.	.	.
6.867	0.1337	0.28	.Q	V	.	.	.	.
6.883	0.1341	0.28	.Q	V	.	.	.	.
6.900	0.1345	0.28	.Q	V	.	.	.	.
6.917	0.1348	0.28	.Q	V	.	.	.	.
6.933	0.1352	0.28	.Q	V	.	.	.	.
6.950	0.1356	0.28	.Q	V	.	.	.	.
6.967	0.1360	0.28	.Q	V	.	.	.	.
6.983	0.1364	0.28	.Q	V	.	.	.	.
7.000	0.1368	0.28	.Q	V	.	.	.	.
7.017	0.1372	0.28	.Q	V	.	.	.	.
7.033	0.1376	0.28	.Q	V	.	.	.	.
7.050	0.1379	0.28	.Q	V	.	.	.	.
7.067	0.1383	0.28	.Q	V	.	.	.	.
7.083	0.1387	0.28	.Q	V	.	.	.	.
7.100	0.1391	0.28	.Q	V	.	.	.	.
7.117	0.1395	0.28	.Q	V	.	.	.	.
7.133	0.1399	0.28	.Q	V	.	.	.	.
7.150	0.1403	0.28	.Q	V	.	.	.	.
7.167	0.1407	0.28	.Q	V	.	.	.	.
7.183	0.1411	0.28	.Q	V	.	.	.	.
7.200	0.1415	0.29	.Q	V	.	.	.	.
7.217	0.1419	0.29	.Q	V	.	.	.	.
7.233	0.1423	0.29	.Q	V	.	.	.	.
7.250	0.1426	0.29	.Q	V	.	.	.	.
7.267	0.1430	0.29	.Q	V	.	.	.	.
7.283	0.1434	0.29	.Q	V	.	.	.	.
7.300	0.1438	0.29	.Q	V	.	.	.	.
7.317	0.1442	0.29	.Q	V	.	.	.	.
7.333	0.1446	0.29	.Q	V	.	.	.	.
7.350	0.1450	0.29	.Q	V	.	.	.	.
7.367	0.1454	0.29	.Q	V	.	.	.	.
7.383	0.1458	0.29	.Q	V	.	.	.	.
7.400	0.1462	0.29	.Q	V	.	.	.	.
7.417	0.1466	0.29	.Q	V	.	.	.	.

7.433	0.1470	0.29	.Q	V	.	.	.	.
7.450	0.1474	0.29	.Q	V	.	.	.	.
7.467	0.1478	0.29	.Q	V	.	.	.	.
7.483	0.1482	0.29	.Q	V	.	.	.	.
7.500	0.1486	0.29	.Q	V	.	.	.	.
7.517	0.1490	0.29	.Q	V	.	.	.	.
7.533	0.1494	0.29	.Q	V	.	.	.	.
7.550	0.1498	0.29	.Q	V	.	.	.	.
7.567	0.1502	0.29	.Q	V	.	.	.	.
7.583	0.1506	0.29	.Q	V	.	.	.	.
7.600	0.1510	0.29	.Q	V	.	.	.	.
7.617	0.1514	0.29	.Q	V	.	.	.	.
7.633	0.1518	0.29	.Q	V	.	.	.	.
7.650	0.1522	0.29	.Q	V	.	.	.	.
7.667	0.1526	0.29	.Q	V	.	.	.	.
7.683	0.1530	0.29	.Q	V	.	.	.	.
7.700	0.1535	0.29	.Q	V	.	.	.	.
7.717	0.1539	0.30	.Q	V	.	.	.	.
7.733	0.1543	0.30	.Q	V	.	.	.	.
7.750	0.1547	0.30	.Q	V	.	.	.	.
7.767	0.1551	0.30	.Q	V	.	.	.	.
7.783	0.1555	0.30	.Q	V	.	.	.	.
7.800	0.1559	0.30	.Q	V	.	.	.	.
7.817	0.1563	0.30	.Q	V	.	.	.	.
7.833	0.1567	0.30	.Q	V	.	.	.	.
7.850	0.1571	0.30	.Q	V	.	.	.	.
7.867	0.1575	0.30	.Q	V	.	.	.	.
7.883	0.1579	0.30	.Q	V	.	.	.	.
7.900	0.1584	0.30	.Q	V	.	.	.	.
7.917	0.1588	0.30	.Q	V	.	.	.	.
7.933	0.1592	0.30	.Q	V	.	.	.	.
7.950	0.1596	0.30	.Q	V	.	.	.	.
7.967	0.1600	0.30	.Q	V	.	.	.	.
7.983	0.1604	0.30	.Q	V	.	.	.	.
8.000	0.1608	0.30	.Q	V	.	.	.	.
8.017	0.1613	0.30	.Q	V	.	.	.	.
8.033	0.1617	0.30	.Q	V	.	.	.	.
8.050	0.1621	0.30	.Q	V	.	.	.	.
8.067	0.1625	0.30	.Q	V	.	.	.	.
8.083	0.1629	0.30	.Q	V	.	.	.	.
8.100	0.1633	0.30	.Q	V	.	.	.	.
8.117	0.1638	0.30	.Q	V	.	.	.	.
8.133	0.1642	0.30	.Q	V	.	.	.	.
8.150	0.1646	0.30	.Q	V	.	.	.	.
8.167	0.1650	0.30	.Q	V	.	.	.	.
8.183	0.1654	0.30	.Q	V	.	.	.	.
8.200	0.1659	0.31	.Q	V	.	.	.	.
8.217	0.1663	0.31	.Q	V	.	.	.	.
8.233	0.1667	0.31	.Q	V	.	.	.	.
8.250	0.1671	0.31	.Q	V	.	.	.	.
8.267	0.1675	0.31	.Q	V	.	.	.	.
8.283	0.1680	0.31	.Q	V	.	.	.	.
8.300	0.1684	0.31	.Q	V	.	.	.	.
8.317	0.1688	0.31	.Q	V	.	.	.	.
8.333	0.1692	0.31	.Q	V	.	.	.	.
8.350	0.1697	0.31	.Q	V	.	.	.	.
8.367	0.1701	0.31	.Q	V	.	.	.	.
8.383	0.1705	0.31	.Q	V	.	.	.	.
8.400	0.1709	0.31	.Q	V	.	.	.	.
8.417	0.1714	0.31	.Q	V	.	.	.	.
8.433	0.1718	0.31	.Q	V	.	.	.	.
8.450	0.1722	0.31	.Q	V	.	.	.	.
8.467	0.1726	0.31	.Q	V	.	.	.	.
8.483	0.1731	0.31	.Q	V	.	.	.	.
8.500	0.1735	0.31	.Q	V	.	.	.	.

8.517	0.1739	0.31	.Q	V	.	.	.	.
8.533	0.1744	0.31	.Q	V	.	.	.	.
8.550	0.1748	0.31	.Q	V	.	.	.	.
8.567	0.1752	0.31	.Q	V	.	.	.	.
8.583	0.1757	0.31	.Q	V	.	.	.	.
8.600	0.1761	0.31	.Q	V	.	.	.	.
8.617	0.1765	0.31	.Q	V	.	.	.	.
8.633	0.1770	0.32	.Q	V	.	.	.	.
8.650	0.1774	0.32	.Q	V	.	.	.	.
8.667	0.1778	0.32	.Q	V	.	.	.	.
8.683	0.1783	0.32	.Q	V	.	.	.	.
8.700	0.1787	0.32	.Q	V	.	.	.	.
8.717	0.1791	0.32	.Q	V	.	.	.	.
8.733	0.1796	0.32	.Q	V	.	.	.	.
8.750	0.1800	0.32	.Q	V	.	.	.	.
8.767	0.1805	0.32	.Q	V	.	.	.	.
8.783	0.1809	0.32	.Q	V	.	.	.	.
8.800	0.1813	0.32	.Q	V	.	.	.	.
8.817	0.1818	0.32	.Q	V	.	.	.	.
8.833	0.1822	0.32	.Q	V	.	.	.	.
8.850	0.1826	0.32	.Q	V	.	.	.	.
8.867	0.1831	0.32	.Q	V	.	.	.	.
8.883	0.1835	0.32	.Q	V	.	.	.	.
8.900	0.1840	0.32	.Q	V	.	.	.	.
8.917	0.1844	0.32	.Q	V	.	.	.	.
8.933	0.1849	0.32	.Q	V	.	.	.	.
8.950	0.1853	0.32	.Q	V	.	.	.	.
8.967	0.1858	0.32	.Q	V	.	.	.	.
8.983	0.1862	0.32	.Q	V	.	.	.	.
9.000	0.1866	0.32	.Q	V	.	.	.	.
9.017	0.1871	0.32	.Q	V	.	.	.	.
9.033	0.1875	0.32	.Q	V	.	.	.	.
9.050	0.1880	0.33	.Q	V	.	.	.	.
9.067	0.1884	0.33	.Q	V	.	.	.	.
9.083	0.1889	0.33	.Q	V	.	.	.	.
9.100	0.1893	0.33	.Q	V	.	.	.	.
9.117	0.1898	0.33	.Q	V	.	.	.	.
9.133	0.1902	0.33	.Q	V	.	.	.	.
9.150	0.1907	0.33	.Q	V	.	.	.	.
9.167	0.1911	0.33	.Q	V	.	.	.	.
9.183	0.1916	0.33	.Q	V	.	.	.	.
9.200	0.1921	0.33	.Q	V	.	.	.	.
9.217	0.1925	0.33	.Q	V	.	.	.	.
9.233	0.1930	0.33	.Q	V	.	.	.	.
9.250	0.1934	0.33	.Q	V	.	.	.	.
9.267	0.1939	0.33	.Q	V	.	.	.	.
9.283	0.1943	0.33	.Q	V	.	.	.	.
9.300	0.1948	0.33	.Q	V	.	.	.	.
9.317	0.1952	0.33	.Q	V	.	.	.	.
9.333	0.1957	0.33	.Q	V	.	.	.	.
9.350	0.1962	0.33	.Q	V	.	.	.	.
9.367	0.1966	0.33	.Q	V	.	.	.	.
9.383	0.1971	0.33	.Q	V	.	.	.	.
9.400	0.1975	0.34	.Q	V	.	.	.	.
9.417	0.1980	0.34	.Q	V	.	.	.	.
9.433	0.1985	0.34	.Q	V	.	.	.	.
9.450	0.1989	0.34	.Q	V	.	.	.	.
9.467	0.1994	0.34	.Q	V	.	.	.	.
9.483	0.1999	0.34	.Q	V	.	.	.	.
9.500	0.2003	0.34	.Q	V	.	.	.	.
9.517	0.2008	0.34	.Q	V	.	.	.	.
9.533	0.2013	0.34	.Q	V	.	.	.	.
9.550	0.2017	0.34	.Q	V	.	.	.	.
9.567	0.2022	0.34	.Q	V	.	.	.	.
9.583	0.2027	0.34	.Q	V	.	.	.	.

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 9.600      0.2031      0.34  .Q      V .          .          .          .
 9.617      0.2036      0.34  .Q      V .          .          .          .
 9.633      0.2041      0.34  .Q      V .          .          .          .
 9.650      0.2045      0.34  .Q      V .          .          .          .
 9.667      0.2050      0.34  .Q      V .          .          .          .
 9.683      0.2055      0.34  .Q      V .          .          .          .
 9.700      0.2060      0.34  .Q      V .          .          .          .
 9.717      0.2064      0.34  .Q      V .          .          .          .
 9.733      0.2069      0.34  .Q      V .          .          .          .
 9.750      0.2074      0.34  .Q      V .          .          .          .
 9.767      0.2079      0.35  .Q      V .          .          .          .
 9.783      0.2083      0.35  .Q      V .          .          .          .
 9.800      0.2088      0.35  .Q      V .          .          .          .
 9.817      0.2093      0.35  .Q      V .          .          .          .
 9.833      0.2098      0.35  .Q      V .          .          .          .
 9.850      0.2102      0.35  .Q      V .          .          .          .
 9.867      0.2107      0.35  .Q      V .          .          .          .
 9.883      0.2112      0.35  .Q      V .          .          .          .
 9.900      0.2117      0.35  .Q      V .          .          .          .
 9.917      0.2122      0.35  .Q      V .          .          .          .
 9.933      0.2127      0.35  .Q      V .          .          .          .
 9.950      0.2131      0.35  .Q      V .          .          .          .
 9.967      0.2136      0.35  .Q      V .          .          .          .
 9.983      0.2141      0.35  .Q      V .          .          .          .
10.000      0.2146      0.35  .Q       V.          .          .          .
10.017      0.2151      0.35  .Q       V.          .          .          .
10.033      0.2156      0.35  .Q       V.          .          .          .
10.050      0.2161      0.36  .Q       V.          .          .          .
10.067      0.2165      0.36  .Q       V.          .          .          .
10.083      0.2170      0.36  .Q       V.          .          .          .
10.100      0.2175      0.36  .Q       V.          .          .          .
10.117      0.2180      0.36  .Q       V.          .          .          .
10.133      0.2185      0.36  .Q       V.          .          .          .
10.150      0.2190      0.36  .Q       V.          .          .          .
10.167      0.2195      0.36  .Q       V.          .          .          .
10.183      0.2200      0.36  .Q       V.          .          .          .
10.200      0.2205      0.36  .Q       V.          .          .          .
10.217      0.2210      0.36  .Q       V.          .          .          .
10.233      0.2215      0.36  .Q       V.          .          .          .
10.250      0.2220      0.36  .Q       V.          .          .          .
10.267      0.2225      0.36  .Q       V.          .          .          .
10.283      0.2230      0.36  .Q       V.          .          .          .
10.300      0.2235      0.36  .Q       V.          .          .          .
10.317      0.2240      0.36  .Q       V.          .          .          .
10.333      0.2245      0.36  .Q       V.          .          .          .
10.350      0.2250      0.37  .Q       V.          .          .          .
10.367      0.2255      0.37  .Q       V.          .          .          .
10.383      0.2260      0.37  .Q       V.          .          .          .
10.400      0.2265      0.37  .Q       V.          .          .          .
10.417      0.2270      0.37  .Q       V.          .          .          .
10.433      0.2275      0.37  .Q       V.          .          .          .
10.450      0.2280      0.37  .Q       V.          .          .          .
10.467      0.2285      0.37  .Q       V.          .          .          .
10.483      0.2290      0.37  .Q       V.          .          .          .
10.500      0.2295      0.37  .Q       V.          .          .          .
10.517      0.2301      0.37  .Q       V.          .          .          .
10.533      0.2306      0.37  .Q       V.          .          .          .
10.550      0.2311      0.37  .Q       V.          .          .          .
10.567      0.2316      0.37  .Q       V.          .          .          .
10.583      0.2321      0.37  .Q       V.          .          .          .
10.600      0.2326      0.37  .Q       V.          .          .          .
10.617      0.2331      0.37  .Q       V.          .          .          .
10.633      0.2337      0.38  .Q       V.          .          .          .
10.650      0.2342      0.38  .Q       V.          .          .          .
10.667      0.2347      0.38  .Q       V.          .          .          .
```

10.683	0.2352	0.38	.Q	V.	.	.	.
10.700	0.2357	0.38	.Q	V.	.	.	.
10.717	0.2363	0.38	.Q	V.	.	.	.
10.733	0.2368	0.38	.Q	V.	.	.	.
10.750	0.2373	0.38	.Q	V.	.	.	.
10.767	0.2378	0.38	.Q	V.	.	.	.
10.783	0.2384	0.38	.Q	V	.	.	.
10.800	0.2389	0.38	.Q	V	.	.	.
10.817	0.2394	0.38	.Q	V	.	.	.
10.833	0.2399	0.38	.Q	V	.	.	.
10.850	0.2405	0.38	.Q	V	.	.	.
10.867	0.2410	0.38	.Q	V	.	.	.
10.883	0.2415	0.38	.Q	V	.	.	.
10.900	0.2421	0.39	.Q	V	.	.	.
10.917	0.2426	0.39	.Q	V	.	.	.
10.933	0.2431	0.39	.Q	V	.	.	.
10.950	0.2437	0.39	.Q	V	.	.	.
10.967	0.2442	0.39	.Q	V	.	.	.
10.983	0.2447	0.39	.Q	V	.	.	.
11.000	0.2453	0.39	.Q	V	.	.	.
11.017	0.2458	0.39	.Q	V	.	.	.
11.033	0.2464	0.39	.Q	V	.	.	.
11.050	0.2469	0.39	.Q	V	.	.	.
11.067	0.2474	0.39	.Q	V	.	.	.
11.083	0.2480	0.39	.Q	V	.	.	.
11.100	0.2485	0.39	.Q	V	.	.	.
11.117	0.2491	0.39	.Q	V	.	.	.
11.133	0.2496	0.40	.Q	V	.	.	.
11.150	0.2502	0.40	.Q	V	.	.	.
11.167	0.2507	0.40	.Q	V	.	.	.
11.183	0.2513	0.40	.Q	V	.	.	.
11.200	0.2518	0.40	.Q	V	.	.	.
11.217	0.2524	0.40	.Q	V	.	.	.
11.233	0.2529	0.40	.Q	V	.	.	.
11.250	0.2535	0.40	.Q	V	.	.	.
11.267	0.2540	0.40	.Q	V	.	.	.
11.283	0.2546	0.40	.Q	V	.	.	.
11.300	0.2551	0.40	.Q	V	.	.	.
11.317	0.2557	0.40	.Q	V	.	.	.
11.333	0.2562	0.41	.Q	V	.	.	.
11.350	0.2568	0.41	.Q	V	.	.	.
11.367	0.2574	0.41	.Q	V	.	.	.
11.383	0.2579	0.41	.Q	V	.	.	.
11.400	0.2585	0.41	.Q	V	.	.	.
11.417	0.2591	0.41	.Q	V	.	.	.
11.433	0.2596	0.41	.Q	V	.	.	.
11.450	0.2602	0.41	.Q	V	.	.	.
11.467	0.2608	0.41	.Q	V	.	.	.
11.483	0.2613	0.41	.Q	V	.	.	.
11.500	0.2619	0.41	.Q	.V	.	.	.
11.517	0.2625	0.41	.Q	.V	.	.	.
11.533	0.2630	0.42	.Q	.V	.	.	.
11.550	0.2636	0.42	.Q	.V	.	.	.
11.567	0.2642	0.42	.Q	.V	.	.	.
11.583	0.2648	0.42	.Q	.V	.	.	.
11.600	0.2653	0.42	.Q	.V	.	.	.
11.617	0.2659	0.42	.Q	.V	.	.	.
11.633	0.2665	0.42	.Q	.V	.	.	.
11.650	0.2671	0.42	.Q	.V	.	.	.
11.667	0.2677	0.42	.Q	.V	.	.	.
11.683	0.2682	0.42	.Q	.V	.	.	.
11.700	0.2688	0.43	.Q	.V	.	.	.
11.717	0.2694	0.43	.Q	.V	.	.	.
11.733	0.2700	0.43	.Q	.V	.	.	.
11.750	0.2706	0.43	.Q	.V	.	.	.

```
11.767      0.2712      0.43  .Q        .V        .         .         .
11.783      0.2718      0.43  .Q        .V        .         .         .
11.800      0.2724      0.43  .Q        .V        .         .         .
11.817      0.2730      0.43  .Q        .V        .         .         .
11.833      0.2736      0.43  .Q        .V        .         .         .
11.850      0.2741      0.43  .Q        .V        .         .         .
11.867      0.2747      0.43  .Q        .V        .         .         .
11.883      0.2753      0.43  .Q        .V        .         .         .
11.900      0.2759      0.44  .Q        .V        .         .         .
11.917      0.2765      0.44  .Q        .V        .         .         .
11.933      0.2772      0.44  .Q        .V        .         .         .
11.950      0.2778      0.44  .Q        .V        .         .         .
11.967      0.2784      0.44  .Q        .V        .         .         .
11.983      0.2790      0.44  .Q        .V        .         .         .
12.000      0.2796      0.44  .Q        .V        .         .         .
12.017      0.2802      0.44  .Q        .V        .         .         .
12.033      0.2808      0.44  .Q        .V        .         .         .
12.050      0.2814      0.44  . Q       .V        .         .         .
12.067      0.2820      0.45  . Q       .V        .         .         .
12.083      0.2827      0.46  . Q       .V        .         .         .
12.100      0.2833      0.46  . Q       .V        .         .         .
12.117      0.2839      0.47  . Q       .V        .         .         .
12.133      0.2846      0.48  . Q       .V        .         .         .
12.150      0.2853      0.48  . Q       .V        .         .         .
12.167      0.2859      0.49  . Q       . V       .         .         .
12.183      0.2866      0.49  . Q       . V       .         .         .
12.200      0.2873      0.49  . Q       . V       .         .         .
12.217      0.2880      0.49  . Q       . V       .         .         .
12.233      0.2886      0.49  . Q       . V       .         .         .
12.250      0.2893      0.49  . Q       . V       .         .         .
12.267      0.2900      0.49  . Q       . V       .         .         .
12.283      0.2907      0.49  . Q       . V       .         .         .
12.300      0.2914      0.50  . Q       . V       .         .         .
12.317      0.2920      0.50  . Q       . V       .         .         .
12.333      0.2927      0.50  . Q       . V       .         .         .
12.350      0.2934      0.50  . Q       . V       .         .         .
12.367      0.2941      0.50  . Q       . V       .         .         .
12.383      0.2948      0.50  . Q       . V       .         .         .
12.400      0.2955      0.51  . Q       . V       .         .         .
12.417      0.2962      0.51  . Q       . V       .         .         .
12.433      0.2969      0.51  . Q       . V       .         .         .
12.450      0.2976      0.51  . Q       . V       .         .         .
12.467      0.2983      0.51  . Q       . V       .         .         .
12.483      0.2990      0.51  . Q       . V       .         .         .
12.500      0.2997      0.51  . Q       . V       .         .         .
12.517      0.3004      0.51  . Q       . V       .         .         .
12.533      0.3011      0.51  . Q       . V       .         .         .
12.550      0.3018      0.51  . Q       . V       .         .         .
12.567      0.3025      0.52  . Q       . V       .         .         .
12.583      0.3033      0.52  . Q       . V       .         .         .
12.600      0.3040      0.52  . Q       . V       .         .         .
12.617      0.3047      0.52  . Q       . V       .         .         .
12.633      0.3054      0.52  . Q       . V       .         .         .
12.650      0.3061      0.52  . Q       . V       .         .         .
12.667      0.3069      0.53  . Q       . V       .         .         .
12.683      0.3076      0.53  . Q       . V       .         .         .
12.700      0.3083      0.53  . Q       . V       .         .         .
12.717      0.3090      0.53  . Q       . V       .         .         .
12.733      0.3098      0.53  . Q       .  V      .         .         .
12.750      0.3105      0.53  . Q       .  V      .         .         .
12.767      0.3112      0.53  . Q       .  V      .         .         .
12.783      0.3120      0.53  . Q       .  V      .         .         .
12.800      0.3127      0.54  . Q       .  V      .         .         .
12.817      0.3134      0.54  . Q       .  V      .         .         .
12.833      0.3142      0.54  . Q       .  V      .         .         .
```

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12.850      0.3149      0.54  . Q       .  V      .         .         .
12.867      0.3157      0.54  . Q       .  V      .         .         .
12.883      0.3164      0.54  . Q       .  V      .         .         .
12.900      0.3172      0.55  . Q       .  V      .         .         .
12.917      0.3179      0.55  . Q       .  V      .         .         .
12.933      0.3187      0.55  . Q       .  V      .         .         .
12.950      0.3194      0.55  . Q       .  V      .         .         .
12.967      0.3202      0.55  . Q       .  V      .         .         .
12.983      0.3209      0.55  . Q       .  V      .         .         .
13.000      0.3217      0.55  . Q       .  V      .         .         .
13.017      0.3225      0.55  . Q       .  V      .         .         .
13.033      0.3232      0.56  . Q       .  V      .         .         .
13.050      0.3240      0.56  . Q       .  V      .         .         .
13.067      0.3248      0.56  . Q       .  V      .         .         .
13.083      0.3256      0.56  . Q       .  V      .         .         .
13.100      0.3263      0.57  . Q       .  V      .         .         .
13.117      0.3271      0.57  . Q       .  V      .         .         .
13.133      0.3279      0.57  . Q       .  V      .         .         .
13.150      0.3287      0.57  . Q       .  V      .         .         .
13.167      0.3295      0.57  . Q       .  V      .         .         .
13.183      0.3302      0.57  . Q       .  V      .         .         .
13.200      0.3310      0.57  . Q       .  V      .         .         .
13.217      0.3318      0.57  . Q       .  V      .         .         .
13.233      0.3326      0.58  . Q       .  V      .         .         .
13.250      0.3334      0.58  . Q       .   V     .         .         .
13.267      0.3342      0.58  . Q       .   V     .         .         .
13.283      0.3350      0.58  . Q       .   V     .         .         .
13.300      0.3358      0.59  . Q       .   V     .         .         .
13.317      0.3366      0.59  . Q       .   V     .         .         .
13.333      0.3374      0.59  . Q       .   V     .         .         .
13.350      0.3383      0.59  . Q       .   V     .         .         .
13.367      0.3391      0.59  . Q       .   V     .         .         .
13.383      0.3399      0.59  . Q       .   V     .         .         .
13.400      0.3407      0.60  . Q       .   V     .         .         .
13.417      0.3415      0.60  . Q       .   V     .         .         .
13.433      0.3424      0.60  . Q       .   V     .         .         .
13.450      0.3432      0.60  . Q       .   V     .         .         .
13.467      0.3440      0.60  . Q       .   V     .         .         .
13.483      0.3448      0.60  . Q       .   V     .         .         .
13.500      0.3457      0.61  . Q       .   V     .         .         .
13.517      0.3465      0.61  . Q       .   V     .         .         .
13.533      0.3474      0.61  . Q       .   V     .         .         .
13.550      0.3482      0.62  . Q       .   V     .         .         .
13.567      0.3491      0.62  . Q       .   V     .         .         .
13.583      0.3499      0.62  . Q       .   V     .         .         .
13.600      0.3508      0.62  . Q       .   V     .         .         .
13.617      0.3516      0.62  . Q       .   V     .         .         .
13.633      0.3525      0.62  . Q       .   V     .         .         .
13.650      0.3534      0.63  . Q       .   V     .         .         .
13.667      0.3542      0.63  . Q       .   V     .         .         .
13.683      0.3551      0.63  . Q       .   V     .         .         .
13.700      0.3560      0.63  . Q       .   V     .         .         .
13.717      0.3568      0.64  . Q       .   V     .         .         .
13.733      0.3577      0.64  . Q       .    V    .         .         .
13.750      0.3586      0.64  . Q       .    V    .         .         .
13.767      0.3595      0.64  . Q       .    V    .         .         .
13.783      0.3604      0.65  . Q       .    V    .         .         .
13.800      0.3613      0.65  . Q       .    V    .         .         .
13.817      0.3622      0.65  . Q       .    V    .         .         .
13.833      0.3631      0.65  . Q       .    V    .         .         .
13.850      0.3640      0.66  . Q       .    V    .         .         .
13.867      0.3649      0.66  . Q       .    V    .         .         .
13.883      0.3658      0.66  . Q       .    V    .         .         .
13.900      0.3667      0.66  . Q       .    V    .         .         .
13.917      0.3676      0.66  . Q       .    V    .         .         .
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13.933	0.3685	0.67	.	Q	.	V	.	.	.
13.950	0.3695	0.67	.	Q	.	V	.	.	.
13.967	0.3704	0.67	.	Q	.	V	.	.	.
13.983	0.3713	0.68	.	Q	.	V	.	.	.
14.000	0.3723	0.68	.	Q	.	V	.	.	.
14.017	0.3732	0.69	.	Q	.	V	.	.	.
14.033	0.3742	0.69	.	Q	.	V	.	.	.
14.050	0.3751	0.69	.	Q	.	V	.	.	.
14.067	0.3761	0.70	.	Q	.	V	.	.	.
14.083	0.3770	0.70	.	Q	.	V	.	.	.
14.100	0.3780	0.71	.	Q	.	V	.	.	.
14.117	0.3790	0.71	.	Q	.	V	.	.	.
14.133	0.3800	0.72	.	Q	.	V	.	.	.
14.150	0.3810	0.72	.	Q	.	V	.	.	.
14.167	0.3820	0.73	.	Q	.	V	.	.	.
14.183	0.3830	0.73	.	Q	.	V	.	.	.
14.200	0.3840	0.74	.	Q	.	V	.	.	.
14.217	0.3850	0.74	.	Q	.	V	.	.	.
14.233	0.3860	0.75	.	Q	.	V	.	.	.
14.250	0.3871	0.75	.	Q	.	V	.	.	.
14.267	0.3881	0.76	.	Q	.	V	.	.	.
14.283	0.3892	0.76	.	Q	.	V	.	.	.
14.300	0.3902	0.76	.	Q	.	V	.	.	.
14.317	0.3913	0.76	.	Q	.	V	.	.	.
14.333	0.3923	0.77	.	Q	.	V	.	.	.
14.350	0.3934	0.77	.	Q	.	V	.	.	.
14.367	0.3944	0.77	.	Q	.	V	.	.	.
14.383	0.3955	0.77	.	Q	.	V	.	.	.
14.400	0.3966	0.78	.	Q	.	V	.	.	.
14.417	0.3977	0.79	.	Q	.	V	.	.	.
14.433	0.3988	0.79	.	Q	.	V	.	.	.
14.450	0.3999	0.80	.	Q	.	V	.	.	.
14.467	0.4010	0.80	.	Q	.	V	.	.	.
14.483	0.4021	0.81	.	Q	.	V	.	.	.
14.500	0.4032	0.81	.	Q	.	V	.	.	.
14.517	0.4043	0.81	.	Q	.	V	.	.	.
14.533	0.4054	0.82	.	Q	.	V	.	.	.
14.550	0.4066	0.82	.	Q	.	V	.	.	.
14.567	0.4077	0.82	.	Q	.	V	.	.	.
14.583	0.4088	0.83	.	Q	.	V	.	.	.
14.600	0.4100	0.83	.	Q	.	V	.	.	.
14.617	0.4111	0.83	.	Q	.	V	.	.	.
14.633	0.4123	0.84	.	Q	.	V	.	.	.
14.650	0.4135	0.85	.	Q	.	V	.	.	.
14.667	0.4146	0.85	.	Q	.	V	.	.	.
14.683	0.4158	0.86	.	Q	.	V	.	.	.
14.700	0.4170	0.87	.	Q	.	V	.	.	.
14.717	0.4182	0.87	.	Q	.	V	.	.	.
14.733	0.4194	0.88	.	Q	.	V	.	.	.
14.750	0.4207	0.88	.	Q	.	V	.	.	.
14.767	0.4219	0.89	.	Q	.	V	.	.	.
14.783	0.4231	0.89	.	Q	.	V	.	.	.
14.800	0.4243	0.90	.	Q	.	V	.	.	.
14.817	0.4256	0.90	.	Q	.	V	.	.	.
14.833	0.4268	0.90	.	Q	.	V	.	.	.
14.850	0.4281	0.91	.	Q	.	V	.	.	.
14.867	0.4293	0.92	.	Q	.	V	.	.	.
14.883	0.4306	0.93	.	Q	.	V	.	.	.
14.900	0.4319	0.94	.	Q	.	V	.	.	.
14.917	0.4332	0.95	.	Q	.	V	.	.	.
14.933	0.4345	0.95	.	Q	.	V	.	.	.
14.950	0.4359	0.96	.	Q	.	V	.	.	.
14.967	0.4372	0.97	.	Q	.	V	.	.	.
14.983	0.4385	0.98	.	Q	.	V	.	.	.
15.000	0.4399	0.98	.	Q	.	V	.	.	.

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15.017      0.4412      0.99  .   Q     .       V .         .         .
15.033      0.4426      0.99  .   Q     .       V .         .         .
15.050      0.4440      1.00  .   Q     .       V .         .         .
15.067      0.4454      1.00  .   Q     .       V .         .         .
15.083      0.4468      1.01  .   Q     .       V .         .         .
15.100      0.4482      1.02  .   Q     .       V .         .         .
15.117      0.4496      1.03  .   Q     .       V .         .         .
15.133      0.4510      1.05  .   Q     .       V .         .         .
15.150      0.4525      1.06  .   Q     .        V.         .         .
15.167      0.4540      1.07  .   Q     .        V.         .         .
15.183      0.4555      1.08  .   Q     .        V.         .         .
15.200      0.4570      1.09  .   Q     .        V.         .         .
15.217      0.4585      1.10  .   Q     .        V.         .         .
15.233      0.4600      1.11  .    Q    .        V.         .         .
15.250      0.4615      1.12  .    Q    .        V.         .         .
15.267      0.4631      1.12  .    Q    .        V.         .         .
15.283      0.4647      1.13  .    Q    .        V.         .         .
15.300      0.4662      1.14  .    Q    .        V.         .         .
15.317      0.4678      1.15  .    Q    .        V.         .         .
15.333      0.4694      1.18  .    Q    .        V.         .         .
15.350      0.4711      1.21  .    Q    .        V.         .         .
15.367      0.4728      1.24  .    Q    .        V.         .         .
15.383      0.4746      1.26  .    Q    .        V.         .         .
15.400      0.4763      1.29  .    Q    .         V         .         .
15.417      0.4781      1.32  .    Q    .         V         .         .
15.433      0.4800      1.34  .     Q   .         V         .         .
15.450      0.4819      1.36  .     Q   .         V         .         .
15.467      0.4837      1.37  .     Q   .         V         .         .
15.483      0.4857      1.39  .     Q   .         V         .         .
15.500      0.4876      1.41  .     Q   .         V         .         .
15.517      0.4896      1.43  .     Q   .         V         .         .
15.533      0.4916      1.44  .     Q   .         V         .         .
15.550      0.4936      1.47  .     Q   .         V         .         .
15.567      0.4957      1.50  .     Q   .         V         .         .
15.583      0.4978      1.54  .     Q   .         V         .         .
15.600      0.4999      1.57  .      Q  .         .V        .         .
15.617      0.5021      1.60  .      Q  .         .V        .         .
15.633      0.5044      1.64  .      Q  .         .V        .         .
15.650      0.5067      1.67  .      Q  .         .V        .         .
15.667      0.5090      1.70  .      Q  .         .V        .         .
15.683      0.5114      1.72  .      Q  .         .V        .         .
15.700      0.5138      1.75  .      Q  .         .V        .         .
15.717      0.5163      1.78  .       Q .         .V        .         .
15.733      0.5187      1.80  .       Q .         .V        .         .
15.750      0.5213      1.83  .       Q .         .V        .         .
15.767      0.5238      1.85  .       Q .         . V       .         .
15.783      0.5264      1.91  .       Q .         . V       .         .
15.800      0.5292      2.00  .        Q.         . V       .         .
15.817      0.5321      2.08  .        Q.         . V       .         .
15.833      0.5350      2.17  .        Q.         . V       .         .
15.850      0.5382      2.26  .         Q         . V       .         .
15.867      0.5414      2.35  .         Q         . V       .         .
15.883      0.5448      2.44  .         .Q        . V       .         .
15.900      0.5483      2.55  .         .Q        .  V      .         .
15.917      0.5520      2.68  .         . Q       .  V      .         .
15.933      0.5558      2.81  .         . Q       .  V      .         .
15.950      0.5599      2.94  .         .  Q      .  V      .         .
15.967      0.5641      3.07  .         .  Q      .  V      .         .
15.983      0.5685      3.19  .         .   Q     .  V      .         .
16.000      0.5731      3.32  .         .    Q    .   V     .         .
16.017      0.5783      3.78  .         .      Q  .   V     .         .
16.033      0.5846      4.56  .         .         Q   V     .         .
16.050      0.5919      5.35  .         .          .   Q    .         .
16.067      0.6004      6.13  .         .          .    V Q  .         .
16.083      0.6099      6.92  .         .          .    V   .Q         .
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16.100      0.6205      7.70  .         .         .     V   .   Q     .
16.117      0.6327      8.86  .         .         .     V   .       Q
16.133      0.6442      8.36  .         .         .      V  .     Q  .
16.150      0.6544      7.39  .         .         .      V  .  Q      .
16.167      0.6633      6.43  .         .         .      V Q.         .
16.183      0.6708      5.46  .         .         .   Q   V .         .
16.200      0.6770      4.49  .         .        Q       V .         .
16.217      0.6818      3.53  .         .    Q    .       V .         .
16.233      0.6854      2.56  .         .Q        .       V .         .
16.250      0.6882      2.07  .        Q.         .       V .         .
16.267      0.6910      1.99  .        Q.         .        V.         .
16.283      0.6936      1.91  .       Q .         .        V.         .
16.300      0.6961      1.83  .       Q .         .        V.         .
16.317      0.6985      1.75  .      Q  .         .        V.         .
16.333      0.7008      1.67  .      Q  .         .        V.         .
16.350      0.7030      1.59  .      Q  .         .        V.         .
16.367      0.7051      1.53  .     Q   .         .        V.         .
16.383      0.7072      1.48  .     Q   .         .        V.         .
16.400      0.7092      1.43  .     Q   .         .        V.         .
16.417      0.7110      1.38  .     Q   .         .        V.         .
16.433      0.7129      1.33  .    Q    .         .        V.         .
16.450      0.7146      1.28  .    Q    .         .         V         .
16.467      0.7163      1.23  .    Q    .         .         V         .
16.483      0.7180      1.19  .    Q    .         .         V         .
16.500      0.7196      1.17  .    Q    .         .         V         .
16.517      0.7212      1.15  .    Q    .         .         V         .
16.533      0.7227      1.12  .    Q    .         .         V         .
16.550      0.7242      1.10  .   Q     .         .         V         .
16.567      0.7257      1.08  .   Q     .         .         V         .
16.583      0.7272      1.06  .   Q     .         .         V         .
16.600      0.7286      1.04  .   Q     .         .         V         .
16.617      0.7300      1.02  .   Q     .         .         V         .
16.633      0.7314      1.01  .   Q     .         .         V         .
16.650      0.7327      0.99  .   Q     .         .         V         .
16.667      0.7341      0.97  .   Q     .         .         V         .
16.683      0.7354      0.96  .   Q     .         .         V         .
16.700      0.7367      0.94  .   Q     .         .         V         .
16.717      0.7380      0.93  .   Q     .         .         .V        .
16.733      0.7392      0.92  .   Q     .         .         .V        .
16.750      0.7405      0.91  .   Q     .         .         .V        .
16.767      0.7417      0.89  .   Q     .         .         .V        .
16.783      0.7429      0.88  .  Q      .         .         .V        .
16.800      0.7441      0.87  .  Q      .         .         .V        .
16.817      0.7453      0.86  .  Q      .         .         .V        .
16.833      0.7465      0.85  .  Q      .         .         .V        .
16.850      0.7476      0.84  .  Q      .         .         .V        .
16.867      0.7488      0.83  .  Q      .         .         .V        .
16.883      0.7499      0.82  .  Q      .         .         .V        .
16.900      0.7510      0.81  .  Q      .         .         .V        .
16.917      0.7521      0.80  .  Q      .         .         .V        .
16.933      0.7532      0.79  .  Q      .         .         .V        .
16.950      0.7543      0.79  .  Q      .         .         .V        .
16.967      0.7554      0.78  .  Q      .         .         .V        .
16.983      0.7565      0.77  .  Q      .         .         .V        .
17.000      0.7575      0.76  .  Q      .         .         .V        .
17.017      0.7586      0.76  .  Q      .         .         .V        .
17.033      0.7596      0.75  .  Q      .         .         .V        .
17.050      0.7606      0.74  .  Q      .         .         .V        .
17.067      0.7616      0.73  .  Q      .         .         . V       .
17.083      0.7626      0.72  .  Q      .         .         . V       .
17.100      0.7636      0.72  .  Q      .         .         . V       .
17.117      0.7646      0.71  .  Q      .         .         . V       .
17.133      0.7655      0.70  .  Q      .         .         . V       .
17.150      0.7665      0.69  .  Q      .         .         . V       .
17.167      0.7674      0.68  .  Q      .         .         . V       .
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17.183      0.7683      0.67  .  Q      .         .         . V       .
17.200      0.7693      0.67  .  Q      .         .         . V       .
17.217      0.7702      0.66  . Q       .         .         . V       .
17.233      0.7711      0.66  . Q       .         .         . V       .
17.250      0.7720      0.65  . Q       .         .         . V       .
17.267      0.7729      0.65  . Q       .         .         . V       .
17.283      0.7737      0.64  . Q       .         .         . V       .
17.300      0.7746      0.64  . Q       .         .         . V       .
17.317      0.7755      0.63  . Q       .         .         . V       .
17.333      0.7764      0.63  . Q       .         .         . V       .
17.350      0.7772      0.62  . Q       .         .         . V       .
17.367      0.7781      0.62  . Q       .         .         . V       .
17.383      0.7789      0.61  . Q       .         .         . V       .
17.400      0.7798      0.61  . Q       .         .         . V       .
17.417      0.7806      0.61  . Q       .         .         . V       .
17.433      0.7814      0.60  . Q       .         .         . V       .
17.450      0.7822      0.60  . Q       .         .         . V       .
17.467      0.7831      0.59  . Q       .         .         . V       .
17.483      0.7839      0.59  . Q       .         .         . V       .
17.500      0.7847      0.59  . Q       .         .         . V       .
17.517      0.7855      0.58  . Q       .         .         .  V      .
17.533      0.7863      0.58  . Q       .         .         .  V      .
17.550      0.7871      0.58  . Q       .         .         .  V      .
17.567      0.7879      0.57  . Q       .         .         .  V      .
17.583      0.7886      0.57  . Q       .         .         .  V      .
17.600      0.7894      0.57  . Q       .         .         .  V      .
17.617      0.7902      0.56  . Q       .         .         .  V      .
17.633      0.7910      0.56  . Q       .         .         .  V      .
17.650      0.7917      0.56  . Q       .         .         .  V      .
17.667      0.7925      0.55  . Q       .         .         .  V      .
17.683      0.7932      0.55  . Q       .         .         .  V      .
17.700      0.7940      0.55  . Q       .         .         .  V      .
17.717      0.7947      0.54  . Q       .         .         .  V      .
17.733      0.7955      0.54  . Q       .         .         .  V      .
17.750      0.7962      0.54  . Q       .         .         .  V      .
17.767      0.7970      0.53  . Q       .         .         .  V      .
17.783      0.7977      0.53  . Q       .         .         .  V      .
17.800      0.7984      0.53  . Q       .         .         .  V      .
17.817      0.7991      0.53  . Q       .         .         .  V      .
17.833      0.7999      0.52  . Q       .         .         .  V      .
17.850      0.8006      0.52  . Q       .         .         .  V      .
17.867      0.8013      0.52  . Q       .         .         .  V      .
17.883      0.8020      0.52  . Q       .         .         .  V      .
17.900      0.8027      0.51  . Q       .         .         .  V      .
17.917      0.8034      0.51  . Q       .         .         .  V      .
17.933      0.8041      0.51  . Q       .         .         .  V      .
17.950      0.8048      0.51  . Q       .         .         .  V      .
17.967      0.8055      0.50  . Q       .         .         .  V      .
17.983      0.8062      0.50  . Q       .         .         .  V      .
18.000      0.8069      0.50  . Q       .         .         .  V      .
18.017      0.8076      0.49  . Q       .         .         .  V      .
18.033      0.8082      0.49  . Q       .         .         .  V      .
18.050      0.8089      0.48  . Q       .         .         .  V      .
18.067      0.8096      0.48  . Q       .         .         .   V     .
18.083      0.8102      0.47  . Q       .         .         .   V     .
18.100      0.8109      0.47  . Q       .         .         .   V     .
18.117      0.8115      0.46  . Q       .         .         .   V     .
18.133      0.8121      0.46  . Q       .         .         .   V     .
18.150      0.8128      0.45  . Q       .         .         .   V     .
18.167      0.8134      0.45  . Q       .         .         .   V     .
18.183      0.8140      0.44  . Q       .         .         .   V     .
18.200      0.8146      0.44  .Q        .         .         .   V     .
18.217      0.8152      0.44  .Q        .         .         .   V     .
18.233      0.8158      0.43  .Q        .         .         .   V     .
18.250      0.8164      0.43  .Q        .         .         .   V     .
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18.267      0.8170      0.43  .Q        .         .         .   V     .
18.283      0.8176      0.43  .Q        .         .         .   V     .
18.300      0.8181      0.43  .Q        .         .         .   V     .
18.317      0.8187      0.42  .Q        .         .         .   V     .
18.333      0.8193      0.42  .Q        .         .         .   V     .
18.350      0.8199      0.42  .Q        .         .         .   V     .
18.367      0.8205      0.42  .Q        .         .         .   V     .
18.383      0.8210      0.42  .Q        .         .         .   V     .
18.400      0.8216      0.41  .Q        .         .         .   V     .
18.417      0.8222      0.41  .Q        .         .         .   V     .
18.433      0.8227      0.41  .Q        .         .         .   V     .
18.450      0.8233      0.41  .Q        .         .         .   V     .
18.467      0.8239      0.41  .Q        .         .         .   V     .
18.483      0.8244      0.41  .Q        .         .         .   V     .
18.500      0.8250      0.40  .Q        .         .         .   V     .
18.517      0.8255      0.40  .Q        .         .         .   V     .
18.533      0.8261      0.40  .Q        .         .         .   V     .
18.550      0.8266      0.40  .Q        .         .         .   V     .
18.567      0.8272      0.40  .Q        .         .         .   V     .
18.583      0.8277      0.40  .Q        .         .         .   V     .
18.600      0.8283      0.40  .Q        .         .         .   V     .
18.617      0.8288      0.39  .Q        .         .         .   V     .
18.633      0.8294      0.39  .Q        .         .         .   V     .
18.650      0.8299      0.39  .Q        .         .         .   V     .
18.667      0.8305      0.39  .Q        .         .         .   V     .
18.683      0.8310      0.39  .Q        .         .         .   V     .
18.700      0.8315      0.39  .Q        .         .         .   V     .
18.717      0.8320      0.39  .Q        .         .         .   V     .
18.733      0.8326      0.38  .Q        .         .         .   V     .
18.750      0.8331      0.38  .Q        .         .         .    V    .
18.767      0.8336      0.38  .Q        .         .         .    V    .
18.783      0.8342      0.38  .Q        .         .         .    V    .
18.800      0.8347      0.38  .Q        .         .         .    V    .
18.817      0.8352      0.38  .Q        .         .         .    V    .
18.833      0.8357      0.38  .Q        .         .         .    V    .
18.850      0.8362      0.37  .Q        .         .         .    V    .
18.867      0.8367      0.37  .Q        .         .         .    V    .
18.883      0.8373      0.37  .Q        .         .         .    V    .
18.900      0.8378      0.37  .Q        .         .         .    V    .
18.917      0.8383      0.37  .Q        .         .         .    V    .
18.933      0.8388      0.37  .Q        .         .         .    V    .
18.950      0.8393      0.37  .Q        .         .         .    V    .
18.967      0.8398      0.37  .Q        .         .         .    V    .
18.983      0.8403      0.36  .Q        .         .         .    V    .
19.000      0.8408      0.36  .Q        .         .         .    V    .
19.017      0.8413      0.36  .Q        .         .         .    V    .
19.033      0.8418      0.36  .Q        .         .         .    V    .
19.050      0.8423      0.36  .Q        .         .         .    V    .
19.067      0.8428      0.36  .Q        .         .         .    V    .
19.083      0.8433      0.36  .Q        .         .         .    V    .
19.100      0.8438      0.36  .Q        .         .         .    V    .
19.117      0.8443      0.36  .Q        .         .         .    V    .
19.133      0.8448      0.35  .Q        .         .         .    V    .
19.150      0.8452      0.35  .Q        .         .         .    V    .
19.167      0.8457      0.35  .Q        .         .         .    V    .
19.183      0.8462      0.35  .Q        .         .         .    V    .
19.200      0.8467      0.35  .Q        .         .         .    V    .
19.217      0.8472      0.35  .Q        .         .         .    V    .
19.233      0.8477      0.35  .Q        .         .         .    V    .
19.250      0.8481      0.35  .Q        .         .         .    V    .
19.267      0.8486      0.35  .Q        .         .         .    V    .
19.283      0.8491      0.35  .Q        .         .         .    V    .
19.300      0.8496      0.34  .Q        .         .         .    V    .
19.317      0.8500      0.34  .Q        .         .         .    V    .
19.333      0.8505      0.34  .Q        .         .         .    V    .
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19.350	0.8510	0.34	.Q	.	.	.	V	.
19.367	0.8514	0.34	.Q	.	.	.	V	.
19.383	0.8519	0.34	.Q	.	.	.	V	.
19.400	0.8524	0.34	.Q	.	.	.	V	.
19.417	0.8528	0.34	.Q	.	.	.	V	.
19.433	0.8533	0.34	.Q	.	.	.	V	.
19.450	0.8538	0.34	.Q	.	.	.	V	.
19.467	0.8542	0.33	.Q	.	.	.	V	.
19.483	0.8547	0.33	.Q	.	.	.	V	.
19.500	0.8551	0.33	.Q	.	.	.	V	.
19.517	0.8556	0.33	.Q	.	.	.	V	.
19.533	0.8561	0.33	.Q	.	.	.	V	.
19.550	0.8565	0.33	.Q	.	.	.	V	.
19.567	0.8570	0.33	.Q	.	.	.	V	.
19.583	0.8574	0.33	.Q	.	.	.	V	.
19.600	0.8579	0.33	.Q	.	.	.	V	.
19.617	0.8583	0.33	.Q	.	.	.	V	.
19.633	0.8588	0.33	.Q	.	.	.	V	.
19.650	0.8592	0.32	.Q	.	.	.	V	.
19.667	0.8597	0.32	.Q	.	.	.	V	.
19.683	0.8601	0.32	.Q	.	.	.	V	.
19.700	0.8605	0.32	.Q	.	.	.	V	.
19.717	0.8610	0.32	.Q	.	.	.	V	.
19.733	0.8614	0.32	.Q	.	.	.	V	.
19.750	0.8619	0.32	.Q	.	.	.	V	.
19.767	0.8623	0.32	.Q	.	.	.	V	.
19.783	0.8627	0.32	.Q	.	.	.	V	.
19.800	0.8632	0.32	.Q	.	.	.	V	.
19.817	0.8636	0.32	.Q	.	.	.	V	.
19.833	0.8640	0.32	.Q	.	.	.	V	.
19.850	0.8645	0.31	.Q	.	.	.	V	.
19.867	0.8649	0.31	.Q	.	.	.	V	.
19.883	0.8653	0.31	.Q	.	.	.	V	.
19.900	0.8658	0.31	.Q	.	.	.	V	.
19.917	0.8662	0.31	.Q	.	.	.	V	.
19.933	0.8666	0.31	.Q	.	.	.	V	.
19.950	0.8671	0.31	.Q	.	.	.	V	.
19.967	0.8675	0.31	.Q	.	.	.	V	.
19.983	0.8679	0.31	.Q	.	.	.	V	.
20.000	0.8683	0.31	.Q	.	.	.	V	.
20.017	0.8688	0.31	.Q	.	.	.	V	.
20.033	0.8692	0.31	.Q	.	.	.	V	.
20.050	0.8696	0.31	.Q	.	.	.	V	.
20.067	0.8700	0.30	.Q	.	.	.	V	.
20.083	0.8704	0.30	.Q	.	.	.	V	.
20.100	0.8709	0.30	.Q	.	.	.	V	.
20.117	0.8713	0.30	.Q	.	.	.	V	.
20.133	0.8717	0.30	.Q	.	.	.	V	.
20.150	0.8721	0.30	.Q	.	.	.	V	.
20.167	0.8725	0.30	.Q	.	.	.	V	.
20.183	0.8729	0.30	.Q	.	.	.	V	.
20.200	0.8733	0.30	.Q	.	.	.	V	.
20.217	0.8737	0.30	.Q	.	.	.	V	.
20.233	0.8742	0.30	.Q	.	.	.	V	.
20.250	0.8746	0.30	.Q	.	.	.	V	.
20.267	0.8750	0.30	.Q	.	.	.	V	.
20.283	0.8754	0.30	.Q	.	.	.	V	.
20.300	0.8758	0.30	.Q	.	.	.	V	.
20.317	0.8762	0.29	.Q	.	.	.	V	.
20.333	0.8766	0.29	.Q	.	.	.	V	.
20.350	0.8770	0.29	.Q	.	.	.	V	.
20.367	0.8774	0.29	.Q	.	.	.	V	.
20.383	0.8778	0.29	.Q	.	.	.	V	.
20.400	0.8782	0.29	.Q	.	.	.	V	.
20.417	0.8786	0.29	.Q	.	.	.	V	.

20.433	0.8790	0.29	.Q	.	.	.	V	.
20.450	0.8794	0.29	.Q	.	.	.	V	.
20.467	0.8798	0.29	.Q	.	.	.	V	.
20.483	0.8802	0.29	.Q	.	.	.	V	.
20.500	0.8806	0.29	.Q	.	.	.	V	.
20.517	0.8810	0.29	.Q	.	.	.	V	.
20.533	0.8814	0.29	.Q	.	.	.	V	.
20.550	0.8818	0.29	.Q	.	.	.	V	.
20.567	0.8822	0.28	.Q	.	.	.	V	.
20.583	0.8826	0.28	.Q	.	.	.	V	.
20.600	0.8830	0.28	.Q	.	.	.	V	.
20.617	0.8833	0.28	.Q	.	.	.	V	.
20.633	0.8837	0.28	.Q	.	.	.	V	.
20.650	0.8841	0.28	.Q	.	.	.	V	.
20.667	0.8845	0.28	.Q	.	.	.	V	.
20.683	0.8849	0.28	.Q	.	.	.	V	.
20.700	0.8853	0.28	.Q	.	.	.	V	.
20.717	0.8857	0.28	.Q	.	.	.	V	.
20.733	0.8861	0.28	.Q	.	.	.	V	.
20.750	0.8864	0.28	.Q	.	.	.	V	.
20.767	0.8868	0.28	.Q	.	.	.	V	.
20.783	0.8872	0.28	.Q	.	.	.	V	.
20.800	0.8876	0.28	.Q	.	.	.	V	.
20.817	0.8880	0.28	.Q	.	.	.	V	.
20.833	0.8883	0.28	.Q	.	.	.	V	.
20.850	0.8887	0.28	.Q	.	.	.	V	.
20.867	0.8891	0.27	.Q	.	.	.	V	.
20.883	0.8895	0.27	.Q	.	.	.	V	.
20.900	0.8899	0.27	.Q	.	.	.	V	.
20.917	0.8902	0.27	.Q	.	.	.	V	.
20.933	0.8906	0.27	.Q	.	.	.	V	.
20.950	0.8910	0.27	.Q	.	.	.	V	.
20.967	0.8914	0.27	.Q	.	.	.	V	.
20.983	0.8917	0.27	.Q	.	.	.	V	.
21.000	0.8921	0.27	.Q	.	.	.	V	.
21.017	0.8925	0.27	.Q	.	.	.	V	.
21.033	0.8928	0.27	.Q	.	.	.	V	.
21.050	0.8932	0.27	.Q	.	.	.	V	.
21.067	0.8936	0.27	.Q	.	.	.	V	.
21.083	0.8940	0.27	.Q	.	.	.	V	.
21.100	0.8943	0.27	.Q	.	.	.	V	.
21.117	0.8947	0.27	.Q	.	.	.	V	.
21.133	0.8951	0.27	.Q	.	.	.	V	.
21.150	0.8954	0.27	.Q	.	.	.	V	.
21.167	0.8958	0.27	.Q	.	.	.	V	.
21.183	0.8962	0.26	.Q	.	.	.	V	.
21.200	0.8965	0.26	.Q	.	.	.	V	.
21.217	0.8969	0.26	.Q	.	.	.	V	.
21.233	0.8972	0.26	.Q	.	.	.	V	.
21.250	0.8976	0.26	.Q	.	.	.	V	.
21.267	0.8980	0.26	.Q	.	.	.	V	.
21.283	0.8983	0.26	.Q	.	.	.	V	.
21.300	0.8987	0.26	.Q	.	.	.	V	.
21.317	0.8990	0.26	.Q	.	.	.	V	.
21.333	0.8994	0.26	.Q	.	.	.	V	.
21.350	0.8998	0.26	.Q	.	.	.	V	.
21.367	0.9001	0.26	.Q	.	.	.	V	.
21.383	0.9005	0.26	.Q	.	.	.	V	.
21.400	0.9008	0.26	.Q	.	.	.	V	.
21.417	0.9012	0.26	.Q	.	.	.	V	.
21.433	0.9015	0.26	.Q	.	.	.	V	.
21.450	0.9019	0.26	.Q	.	.	.	V	.
21.467	0.9023	0.26	.Q	.	.	.	V	.
21.483	0.9026	0.26	.Q	.	.	.	V	.
21.500	0.9030	0.26	.Q	.	.	.	V	.

```
21.517      0.9033      0.26  .Q        .         .         .      V  .
21.533      0.9037      0.26  .Q        .         .         .      V  .
21.550      0.9040      0.25  .Q        .         .         .      V  .
21.567      0.9044      0.25  .Q        .         .         .       V .
21.583      0.9047      0.25  .Q        .         .         .       V .
21.600      0.9051      0.25  .Q        .         .         .       V .
21.617      0.9054      0.25  .Q        .         .         .       V .
21.633      0.9058      0.25  .Q        .         .         .       V .
21.650      0.9061      0.25  .Q        .         .         .       V .
21.667      0.9065      0.25  .Q        .         .         .       V .
21.683      0.9068      0.25  .Q        .         .         .       V .
21.700      0.9071      0.25  .Q        .         .         .       V .
21.717      0.9075      0.25  .Q        .         .         .       V .
21.733      0.9078      0.25  .Q        .         .         .       V .
21.750      0.9082      0.25  .Q        .         .         .       V .
21.767      0.9085      0.25  .Q        .         .         .       V .
21.783      0.9089      0.25  .Q        .         .         .       V .
21.800      0.9092      0.25  .Q        .         .         .       V .
21.817      0.9095      0.25  .Q        .         .         .       V .
21.833      0.9099      0.25  .Q        .         .         .       V .
21.850      0.9102      0.25  .Q        .         .         .       V .
21.867      0.9106      0.25  .Q        .         .         .       V .
21.883      0.9109      0.25  .Q        .         .         .       V .
21.900      0.9112      0.25  .Q        .         .         .       V .
21.917      0.9116      0.25  .Q        .         .         .       V .
21.933      0.9119      0.25  .Q        .         .         .       V .
21.950      0.9123      0.24  .Q        .         .         .       V .
21.967      0.9126      0.24  .Q        .         .         .       V .
21.983      0.9129      0.24  .Q        .         .         .       V .
22.000      0.9133      0.24  .Q        .         .         .       V .
22.017      0.9136      0.24  .Q        .         .         .       V .
22.033      0.9139      0.24  .Q        .         .         .       V .
22.050      0.9143      0.24  .Q        .         .         .       V .
22.067      0.9146      0.24  .Q        .         .         .       V .
22.083      0.9149      0.24  .Q        .         .         .       V .
22.100      0.9153      0.24  .Q        .         .         .       V .
22.117      0.9156      0.24  .Q        .         .         .       V .
22.133      0.9159      0.24  .Q        .         .         .       V .
22.150      0.9163      0.24  .Q        .         .         .       V .
22.167      0.9166      0.24  .Q        .         .         .       V .
22.183      0.9169      0.24  .Q        .         .         .       V .
22.200      0.9173      0.24  .Q        .         .         .       V .
22.217      0.9176      0.24  .Q        .         .         .       V .
22.233      0.9179      0.24  .Q        .         .         .       V .
22.250      0.9182      0.24  .Q        .         .         .       V .
22.267      0.9186      0.24  .Q        .         .         .       V .
22.283      0.9189      0.24  .Q        .         .         .       V .
22.300      0.9192      0.24  .Q        .         .         .       V .
22.317      0.9195      0.24  .Q        .         .         .       V .
22.333      0.9199      0.24  .Q        .         .         .       V .
22.350      0.9202      0.24  .Q        .         .         .       V .
22.367      0.9205      0.24  .Q        .         .         .       V .
22.383      0.9208      0.24  .Q        .         .         .       V .
22.400      0.9212      0.23  .Q        .         .         .       V .
22.417      0.9215      0.23  .Q        .         .         .       V .
22.433      0.9218      0.23  .Q        .         .         .       V .
22.450      0.9221      0.23  .Q        .         .         .       V .
22.467      0.9225      0.23  .Q        .         .         .       V .
22.483      0.9228      0.23  .Q        .         .         .       V .
22.500      0.9231      0.23  .Q        .         .         .       V .
22.517      0.9234      0.23  .Q        .         .         .       V .
22.533      0.9237      0.23  .Q        .         .         .       V .
22.550      0.9241      0.23  .Q        .         .         .       V .
22.567      0.9244      0.23  .Q        .         .         .       V .
22.583      0.9247      0.23  .Q        .         .         .       V .
```

22.600	0.9250	0.23	.Q	.	.	.	V .
22.617	0.9253	0.23	.Q	.	.	.	V .
22.633	0.9256	0.23	.Q	.	.	.	V .
22.650	0.9260	0.23	.Q	.	.	.	V .
22.667	0.9263	0.23	.Q	.	.	.	V .
22.683	0.9266	0.23	.Q	.	.	.	V .
22.700	0.9269	0.23	.Q	.	.	.	V .
22.717	0.9272	0.23	.Q	.	.	.	V .
22.733	0.9275	0.23	.Q	.	.	.	V .
22.750	0.9278	0.23	.Q	.	.	.	V .
22.767	0.9282	0.23	.Q	.	.	.	V.
22.783	0.9285	0.23	.Q	.	.	.	V.
22.800	0.9288	0.23	.Q	.	.	.	V.
22.817	0.9291	0.23	.Q	.	.	.	V.
22.833	0.9294	0.23	.Q	.	.	.	V.
22.850	0.9297	0.23	.Q	.	.	.	V.
22.867	0.9300	0.23	.Q	.	.	.	V.
22.883	0.9303	0.23	.Q	.	.	.	V.
22.900	0.9306	0.22	.Q	.	.	.	V.
22.917	0.9310	0.22	.Q	.	.	.	V.
22.933	0.9313	0.22	.Q	.	.	.	V.
22.950	0.9316	0.22	.Q	.	.	.	V.
22.967	0.9319	0.22	.Q	.	.	.	V.
22.983	0.9322	0.22	.Q	.	.	.	V.
23.000	0.9325	0.22	.Q	.	.	.	V.
23.017	0.9328	0.22	.Q	.	.	.	V.
23.033	0.9331	0.22	.Q	.	.	.	V.
23.050	0.9334	0.22	.Q	.	.	.	V.
23.067	0.9337	0.22	.Q	.	.	.	V.
23.083	0.9340	0.22	Q	.	.	.	V.
23.100	0.9343	0.22	Q	.	.	.	V.
23.117	0.9346	0.22	Q	.	.	.	V.
23.133	0.9349	0.22	Q	.	.	.	V.
23.150	0.9352	0.22	Q	.	.	.	V.
23.167	0.9355	0.22	Q	.	.	.	V.
23.183	0.9358	0.22	Q	.	.	.	V.
23.200	0.9361	0.22	Q	.	.	.	V.
23.217	0.9364	0.22	Q	.	.	.	V.
23.233	0.9367	0.22	Q	.	.	.	V.
23.250	0.9370	0.22	Q	.	.	.	V.
23.267	0.9374	0.22	Q	.	.	.	V.
23.283	0.9377	0.22	Q	.	.	.	V.
23.300	0.9380	0.22	Q	.	.	.	V.
23.317	0.9382	0.22	Q	.	.	.	V.
23.333	0.9385	0.22	Q	.	.	.	V.
23.350	0.9388	0.22	Q	.	.	.	V.
23.367	0.9391	0.22	Q	.	.	.	V.
23.383	0.9394	0.22	Q	.	.	.	V.
23.400	0.9397	0.22	Q	.	.	.	V.
23.417	0.9400	0.22	Q	.	.	.	V.
23.433	0.9403	0.22	Q	.	.	.	V.
23.450	0.9406	0.22	Q	.	.	.	V.
23.467	0.9409	0.21	Q	.	.	.	V.
23.483	0.9412	0.21	Q	.	.	.	V.
23.500	0.9415	0.21	Q	.	.	.	V.
23.517	0.9418	0.21	Q	.	.	.	V.
23.533	0.9421	0.21	Q	.	.	.	V.
23.550	0.9424	0.21	Q	.	.	.	V.
23.567	0.9427	0.21	Q	.	.	.	V.
23.583	0.9430	0.21	Q	.	.	.	V.
23.600	0.9433	0.21	Q	.	.	.	V.
23.617	0.9436	0.21	Q	.	.	.	V.
23.633	0.9439	0.21	Q	.	.	.	V.
23.650	0.9442	0.21	Q	.	.	.	V.
23.667	0.9444	0.21	Q	.	.	.	V.

```
  23.683      0.9447      0.21  Q          .          .          .         V.
  23.700      0.9450      0.21  Q          .          .          .         V.
  23.717      0.9453      0.21  Q          .          .          .         V.
  23.733      0.9456      0.21  Q          .          .          .         V.
  23.750      0.9459      0.21  Q          .          .          .         V.
  23.767      0.9462      0.21  Q          .          .          .         V.
  23.783      0.9465      0.21  Q          .          .          .         V.
  23.800      0.9468      0.21  Q          .          .          .         V.
  23.817      0.9471      0.21  Q          .          .          .         V.
  23.833      0.9473      0.21  Q          .          .          .         V.
  23.850      0.9476      0.21  Q          .          .          .         V.
  23.867      0.9479      0.21  Q          .          .          .         V.
  23.883      0.9482      0.21  Q          .          .          .         V.
  23.900      0.9485      0.21  Q          .          .          .         V.
  23.917      0.9488      0.21  Q          .          .          .         V.
  23.933      0.9491      0.21  Q          .          .          .         V.
  23.950      0.9493      0.21  Q          .          .          .         V.
  23.967      0.9496      0.21  Q          .          .          .         V.
  23.983      0.9499      0.21  Q          .          .          .         V.
  24.000      0.9502      0.21  Q          .          .          .         V.
  24.017      0.9505      0.21  Q          .          .          .         V.
  24.033      0.9508      0.20  Q          .          .          .         V.
  24.050      0.9510      0.18  Q          .          .          .         V.
  24.067      0.9512      0.15  Q          .          .          .         V.
  24.083      0.9514      0.12  Q          .          .          .         V.
  24.100      0.9515      0.09  Q          .          .          .         V.
  24.117      0.9516      0.06  Q          .          .          .         V.
  24.133      0.9516      0.03  Q          .          .          .          V

****************************************************************************
  FLOW PROCESS FROM NODE   1123.00 TO NODE   1123.00 IS CODE =   6
----------------------------------------------------------------------------
  >>>>>STREAM NUMBER 1 CLEARED AND SET TO ZERO<<<<<
============================================================================
============================================================================

  END OF FLOODSCx ROUTING ANALYSIS
```

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_____________________________________________________________________________
*****************************************************************************
           NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                     AND LOW LOSS FRACTION ESTIMATIONS
=============================================================================
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                            Analysis prepared by:

                            DRC Engineering, Inc.
                   160 South Old Springs Road, Suite 210
                      Anaheim Hills, California 92808
                   Tel: 714-685-6860 * Fax: 714-685-6801

*****************************************************************************
-----------------------------------------------------------------------------

 Problem Descriptions:
  RESIDENCE AT CASA LOMA - REDLANDS
  PROPOSED CONDITION
  HYDROLOGIC ANALYSIS - 25-YEAR
=============================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC II:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     3.89 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1          5.25       20.00            32.       0.975       0.752

    TOTAL AREA (Acres) =      5.25

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.195

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.248
=============================================================================
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              F L O O D    R O U T I N G    A N A L Y S I S
          USING COUNTY HYDROLOGY MANUAL OF SAN BERNARDINO(1986)
         (c) Copyright 1989-2003 Advanced Engineering Software (aes)
             Ver. 8.0  Release Date: 01/01/2003  License ID 1510

                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 *************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AS CASA LOMA - REDLANDS                                        *
* PROPOSED CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 25-YEAR                                            *
 ***************************************************************************

  FILE NAME: 1803P025.FLD
  TIME/DATE OF STUDY: 18:00 03/14/2018

   The Small Area Unit Hydrograph Procedures in Section J
   of the Hydrology Manual provides estimates of runoff
   hydrograph and runoff volume for watersheds whose time of
   concentration is less than 25 minutes. The PROGRAM User
   should check the applicability of using the small area unit
   hydrograph procedures, and follow the guidelines in
   Sections J and K.5 in complex watershed modeling.


****************************************************************************
  FLOW PROCESS FROM NODE   1000.00 TO NODE   1123.00 IS CODE = 1.2
----------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<
============================================================================

  (SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

    RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
    TOTAL CATCHMENT AREA(ACRES) =    5.25
    SOIL-LOSS RATE, Fm,(INCH/HR) =  0.195
    LOW LOSS FRACTION = 0.248
    TIME OF CONCENTRATION(MIN.) =  6.87
    SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
    USER SPECIFIED RAINFALL VALUES ARE USED:
    RETURN FREQUENCY(YEARS) =  25
       5-MINUTE POINT RAINFALL VALUE(INCHES) =  0.25
      30-MINUTE POINT RAINFALL VALUE(INCHES) =  0.64
       1-HOUR   POINT RAINFALL VALUE(INCHES) =  0.91
       3-HOUR   POINT RAINFALL VALUE(INCHES) =  1.54
       6-HOUR   POINT RAINFALL VALUE(INCHES) =  2.13
      24-HOUR   POINT RAINFALL VALUE(INCHES) =  3.89

----------------------------------------------------------------------------
    TOTAL CATCHMENT   RUNOFF  VOLUME(ACRE-FEET) =     1.17
    TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) =     0.53

----------------------------------------------------------------------------

============================================================================

                      2 4 - H O U R   S T O R M
```

R U N O F F H Y D R O G R A P H

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	2.8	5.6	8.4	11.2
0.017	0.0000	0.02	Q	.	.	.	.
0.033	0.0001	0.07	Q	.	.	.	.
0.050	0.0003	0.12	Q	.	.	.	.
0.067	0.0005	0.17	Q	.	.	.	.
0.083	0.0009	0.22	Q	.	.	.	.
0.100	0.0012	0.25	Q	.	.	.	.
0.117	0.0015	0.25	Q	.	.	.	.
0.133	0.0019	0.25	Q	.	.	.	.
0.150	0.0022	0.25	Q	.	.	.	.
0.167	0.0026	0.25	Q	.	.	.	.
0.183	0.0029	0.25	Q	.	.	.	.
0.200	0.0033	0.25	Q	.	.	.	.
0.217	0.0036	0.25	Q	.	.	.	.
0.233	0.0040	0.25	Q	.	.	.	.
0.250	0.0043	0.25	Q	.	.	.	.
0.267	0.0047	0.25	Q	.	.	.	.
0.283	0.0050	0.25	Q	.	.	.	.
0.300	0.0053	0.25	Q	.	.	.	.
0.317	0.0057	0.25	Q	.	.	.	.
0.333	0.0060	0.25	Q	.	.	.	.
0.350	0.0064	0.25	Q	.	.	.	.
0.367	0.0067	0.25	Q	.	.	.	.
0.383	0.0071	0.25	Q	.	.	.	.
0.400	0.0074	0.25	Q	.	.	.	.
0.417	0.0078	0.25	Q	.	.	.	.
0.433	0.0081	0.25	Q	.	.	.	.
0.450	0.0085	0.25	Q	.	.	.	.
0.467	0.0088	0.25	Q	.	.	.	.
0.483	0.0092	0.25	Q	.	.	.	.
0.500	0.0095	0.25	Q	.	.	.	.
0.517	0.0099	0.25	Q	.	.	.	.
0.533	0.0102	0.25	Q	.	.	.	.
0.550	0.0106	0.25	Q	.	.	.	.
0.567	0.0109	0.25	Q	.	.	.	.
0.583	0.0113	0.25	Q	.	.	.	.
0.600	0.0116	0.25	Q	.	.	.	.
0.617	0.0120	0.25	Q	.	.	.	.
0.633	0.0123	0.25	Q	.	.	.	.
0.650	0.0127	0.26	Q	.	.	.	.
0.667	0.0130	0.26	Q	.	.	.	.
0.683	0.0134	0.26	Q	.	.	.	.
0.700	0.0137	0.26	Q	.	.	.	.
0.717	0.0141	0.26	Q	.	.	.	.
0.733	0.0144	0.26	Q	.	.	.	.
0.750	0.0148	0.26	Q	.	.	.	.
0.767	0.0151	0.26	Q	.	.	.	.
0.783	0.0155	0.26	Q	.	.	.	.
0.800	0.0159	0.26	Q	.	.	.	.
0.817	0.0162	0.26	Q	.	.	.	.
0.833	0.0166	0.26	Q	.	.	.	.
0.850	0.0169	0.26	Q	.	.	.	.
0.867	0.0173	0.26	Q	.	.	.	.
0.883	0.0176	0.26	Q	.	.	.	.
0.900	0.0180	0.26	Q	.	.	.	.
0.917	0.0183	0.26	Q	.	.	.	.

0.933	0.0187	0.26	Q	.	.	.	.
0.950	0.0190	0.26	Q	.	.	.	.
0.967	0.0194	0.26	Q	.	.	.	.
0.983	0.0198	0.26	Q	.	.	.	.
1.000	0.0201	0.26	Q	.	.	.	.
1.017	0.0205	0.26	Q	.	.	.	.
1.033	0.0208	0.26	Q	.	.	.	.
1.050	0.0212	0.26	Q	.	.	.	.
1.067	0.0215	0.26	Q	.	.	.	.
1.083	0.0219	0.26	Q	.	.	.	.
1.100	0.0223	0.26	Q	.	.	.	.
1.117	0.0226	0.26	Q	.	.	.	.
1.133	0.0230	0.26	Q	.	.	.	.
1.150	0.0233	0.26	Q	.	.	.	.
1.167	0.0237	0.26	Q	.	.	.	.
1.183	0.0240	0.26	Q	.	.	.	.
1.200	0.0244	0.26	Q	.	.	.	.
1.217	0.0248	0.26	Q	.	.	.	.
1.233	0.0251	0.26	Q	.	.	.	.
1.250	0.0255	0.26	Q	.	.	.	.
1.267	0.0258	0.26	Q	.	.	.	.
1.283	0.0262	0.26	Q	.	.	.	.
1.300	0.0266	0.26	Q	.	.	.	.
1.317	0.0269	0.26	Q	.	.	.	.
1.333	0.0273	0.26	Q	.	.	.	.
1.350	0.0276	0.26	Q	.	.	.	.
1.367	0.0280	0.26	Q	.	.	.	.
1.383	0.0284	0.26	Q	.	.	.	.
1.400	0.0287	0.26	Q	.	.	.	.
1.417	0.0291	0.26	Q	.	.	.	.
1.433	0.0295	0.26	QV	.	.	.	.
1.450	0.0298	0.26	QV	.	.	.	.
1.467	0.0302	0.26	QV	.	.	.	.
1.483	0.0305	0.26	QV	.	.	.	.
1.500	0.0309	0.26	QV	.	.	.	.
1.517	0.0313	0.26	QV	.	.	.	.
1.533	0.0316	0.26	QV	.	.	.	.
1.550	0.0320	0.26	QV	.	.	.	.
1.567	0.0324	0.26	QV	.	.	.	.
1.583	0.0327	0.26	QV	.	.	.	.
1.600	0.0331	0.26	QV	.	.	.	.
1.617	0.0334	0.26	QV	.	.	.	.
1.633	0.0338	0.26	QV	.	.	.	.
1.650	0.0342	0.27	QV	.	.	.	.
1.667	0.0345	0.27	QV	.	.	.	.
1.683	0.0349	0.27	QV	.	.	.	.
1.700	0.0353	0.27	QV	.	.	.	.
1.717	0.0356	0.27	QV	.	.	.	.
1.733	0.0360	0.27	QV	.	.	.	.
1.750	0.0364	0.27	QV	.	.	.	.
1.767	0.0367	0.27	QV	.	.	.	.
1.783	0.0371	0.27	QV	.	.	.	.
1.800	0.0375	0.27	QV	.	.	.	.
1.817	0.0378	0.27	QV	.	.	.	.
1.833	0.0382	0.27	QV	.	.	.	.
1.850	0.0386	0.27	QV	.	.	.	.
1.867	0.0389	0.27	QV	.	.	.	.
1.883	0.0393	0.27	QV	.	.	.	.
1.900	0.0397	0.27	QV	.	.	.	.
1.917	0.0401	0.27	QV	.	.	.	.
1.933	0.0404	0.27	QV	.	.	.	.
1.950	0.0408	0.27	QV	.	.	.	.
1.967	0.0412	0.27	QV	.	.	.	.
1.983	0.0415	0.27	QV	.	.	.	.
2.000	0.0419	0.27	QV	.	.	.	.

2.017	0.0423	0.27	QV	.	.	.	.
2.033	0.0426	0.27	QV	.	.	.	.
2.050	0.0430	0.27	QV	.	.	.	.
2.067	0.0434	0.27	QV	.	.	.	.
2.083	0.0438	0.27	QV	.	.	.	.
2.100	0.0441	0.27	QV	.	.	.	.
2.117	0.0445	0.27	QV	.	.	.	.
2.133	0.0449	0.27	QV	.	.	.	.
2.150	0.0452	0.27	QV	.	.	.	.
2.167	0.0456	0.27	QV	.	.	.	.
2.183	0.0460	0.27	QV	.	.	.	.
2.200	0.0464	0.27	QV	.	.	.	.
2.217	0.0467	0.27	QV	.	.	.	.
2.233	0.0471	0.27	QV	.	.	.	.
2.250	0.0475	0.27	QV	.	.	.	.
2.267	0.0479	0.27	QV	.	.	.	.
2.283	0.0482	0.27	QV	.	.	.	.
2.300	0.0486	0.27	QV	.	.	.	.
2.317	0.0490	0.27	QV	.	.	.	.
2.333	0.0494	0.27	QV	.	.	.	.
2.350	0.0497	0.27	QV	.	.	.	.
2.367	0.0501	0.27	QV	.	.	.	.
2.383	0.0505	0.27	QV	.	.	.	.
2.400	0.0509	0.27	QV	.	.	.	.
2.417	0.0512	0.27	QV	.	.	.	.
2.433	0.0516	0.27	QV	.	.	.	.
2.450	0.0520	0.27	QV	.	.	.	.
2.467	0.0524	0.27	QV	.	.	.	.
2.483	0.0527	0.27	QV	.	.	.	.
2.500	0.0531	0.27	QV	.	.	.	.
2.517	0.0535	0.27	QV	.	.	.	.
2.533	0.0539	0.27	QV	.	.	.	.
2.550	0.0543	0.27	QV	.	.	.	.
2.567	0.0546	0.28	QV	.	.	.	.
2.583	0.0550	0.28	QV	.	.	.	.
2.600	0.0554	0.28	QV	.	.	.	.
2.617	0.0558	0.28	QV	.	.	.	.
2.633	0.0562	0.28	QV	.	.	.	.
2.650	0.0565	0.28	QV	.	.	.	.
2.667	0.0569	0.28	QV	.	.	.	.
2.683	0.0573	0.28	QV	.	.	.	.
2.700	0.0577	0.28	QV	.	.	.	.
2.717	0.0581	0.28	QV	.	.	.	.
2.733	0.0584	0.28	Q V	.	.	.	.
2.750	0.0588	0.28	Q V	.	.	.	.
2.767	0.0592	0.28	Q V	.	.	.	.
2.783	0.0596	0.28	Q V	.	.	.	.
2.800	0.0600	0.28	Q V	.	.	.	.
2.817	0.0603	0.28	Q V	.	.	.	.
2.833	0.0607	0.28	Q V	.	.	.	.
2.850	0.0611	0.28	Q V	.	.	.	.
2.867	0.0615	0.28	Q V	.	.	.	.
2.883	0.0619	0.28	Q V	.	.	.	.
2.900	0.0623	0.28	Q V	.	.	.	.
2.917	0.0627	0.28	Q V	.	.	.	.
2.933	0.0630	0.28	Q V	.	.	.	.
2.950	0.0634	0.28	Q V	.	.	.	.
2.967	0.0638	0.28	.QV	.	.	.	.
2.983	0.0642	0.28	.QV	.	.	.	.
3.000	0.0646	0.28	.QV	.	.	.	.
3.017	0.0650	0.28	.QV	.	.	.	.
3.033	0.0654	0.28	.QV	.	.	.	.
3.050	0.0657	0.28	.QV	.	.	.	.
3.067	0.0661	0.28	.QV	.	.	.	.
3.083	0.0665	0.28	.QV	.	.	.	.

3.100	0.0669	0.28	.QV	.	.	.	.
3.117	0.0673	0.28	.QV	.	.	.	.
3.133	0.0677	0.28	.QV	.	.	.	.
3.150	0.0681	0.28	.QV	.	.	.	.
3.167	0.0685	0.28	.QV	.	.	.	.
3.183	0.0688	0.28	.QV	.	.	.	.
3.200	0.0692	0.28	.QV	.	.	.	.
3.217	0.0696	0.28	.QV	.	.	.	.
3.233	0.0700	0.28	.QV	.	.	.	.
3.250	0.0704	0.28	.QV	.	.	.	.
3.267	0.0708	0.28	.QV	.	.	.	.
3.283	0.0712	0.28	.QV	.	.	.	.
3.300	0.0716	0.28	.QV	.	.	.	.
3.317	0.0720	0.28	.QV	.	.	.	.
3.333	0.0724	0.28	.QV	.	.	.	.
3.350	0.0727	0.28	.QV	.	.	.	.
3.367	0.0731	0.28	.QV	.	.	.	.
3.383	0.0735	0.28	.QV	.	.	.	.
3.400	0.0739	0.28	.QV	.	.	.	.
3.417	0.0743	0.29	.QV	.	.	.	.
3.433	0.0747	0.29	.QV	.	.	.	.
3.450	0.0751	0.29	.QV	.	.	.	.
3.467	0.0755	0.29	.QV	.	.	.	.
3.483	0.0759	0.29	.QV	.	.	.	.
3.500	0.0763	0.29	.QV	.	.	.	.
3.517	0.0767	0.29	.QV	.	.	.	.
3.533	0.0771	0.29	.QV	.	.	.	.
3.550	0.0775	0.29	.QV	.	.	.	.
3.567	0.0779	0.29	.QV	.	.	.	.
3.583	0.0783	0.29	.QV	.	.	.	.
3.600	0.0787	0.29	.QV	.	.	.	.
3.617	0.0791	0.29	.QV	.	.	.	.
3.633	0.0795	0.29	.QV	.	.	.	.
3.650	0.0798	0.29	.QV	.	.	.	.
3.667	0.0802	0.29	.QV	.	.	.	.
3.683	0.0806	0.29	.QV	.	.	.	.
3.700	0.0810	0.29	.QV	.	.	.	.
3.717	0.0814	0.29	.QV	.	.	.	.
3.733	0.0818	0.29	.QV	.	.	.	.
3.750	0.0822	0.29	.QV	.	.	.	.
3.767	0.0826	0.29	.QV	.	.	.	.
3.783	0.0830	0.29	.QV	.	.	.	.
3.800	0.0834	0.29	.QV	.	.	.	.
3.817	0.0838	0.29	.QV	.	.	.	.
3.833	0.0842	0.29	.QV	.	.	.	.
3.850	0.0846	0.29	.QV	.	.	.	.
3.867	0.0850	0.29	.QV	.	.	.	.
3.883	0.0854	0.29	.QV	.	.	.	.
3.900	0.0858	0.29	.QV	.	.	.	.
3.917	0.0862	0.29	.QV	.	.	.	.
3.933	0.0866	0.29	.QV	.	.	.	.
3.950	0.0870	0.29	.QV	.	.	.	.
3.967	0.0875	0.29	.QV	.	.	.	.
3.983	0.0879	0.29	.Q V	.	.	.	.
4.000	0.0883	0.29	.Q V	.	.	.	.
4.017	0.0887	0.29	.Q V	.	.	.	.
4.033	0.0891	0.29	.Q V	.	.	.	.
4.050	0.0895	0.29	.Q V	.	.	.	.
4.067	0.0899	0.29	.Q V	.	.	.	.
4.083	0.0903	0.29	.Q V	.	.	.	.
4.100	0.0907	0.29	.Q V	.	.	.	.
4.117	0.0911	0.29	.Q V	.	.	.	.
4.133	0.0915	0.29	.Q V	.	.	.	.
4.150	0.0919	0.30	.Q V	.	.	.	.
4.167	0.0923	0.30	.Q V	.	.	.	.

4.183	0.0927	0.30	.Q V	.	.	.	.
4.200	0.0931	0.30	.Q V	.	.	.	.
4.217	0.0935	0.30	.Q V	.	.	.	.
4.233	0.0939	0.30	.Q V	.	.	.	.
4.250	0.0944	0.30	.Q V	.	.	.	.
4.267	0.0948	0.30	.Q V	.	.	.	.
4.283	0.0952	0.30	.Q V	.	.	.	.
4.300	0.0956	0.30	.Q V	.	.	.	.
4.317	0.0960	0.30	.Q V	.	.	.	.
4.333	0.0964	0.30	.Q V	.	.	.	.
4.350	0.0968	0.30	.Q V	.	.	.	.
4.367	0.0972	0.30	.Q V	.	.	.	.
4.383	0.0976	0.30	.Q V	.	.	.	.
4.400	0.0980	0.30	.Q V	.	.	.	.
4.417	0.0985	0.30	.Q V	.	.	.	.
4.433	0.0989	0.30	.Q V	.	.	.	.
4.450	0.0993	0.30	.Q V	.	.	.	.
4.467	0.0997	0.30	.Q V	.	.	.	.
4.483	0.1001	0.30	.Q V	.	.	.	.
4.500	0.1005	0.30	.Q V	.	.	.	.
4.517	0.1009	0.30	.Q V	.	.	.	.
4.533	0.1013	0.30	.Q V	.	.	.	.
4.550	0.1018	0.30	.Q V	.	.	.	.
4.567	0.1022	0.30	.Q V	.	.	.	.
4.583	0.1026	0.30	.Q V	.	.	.	.
4.600	0.1030	0.30	.Q V	.	.	.	.
4.617	0.1034	0.30	.Q V	.	.	.	.
4.633	0.1038	0.30	.Q V	.	.	.	.
4.650	0.1043	0.30	.Q V	.	.	.	.
4.667	0.1047	0.30	.Q V	.	.	.	.
4.683	0.1051	0.30	.Q V	.	.	.	.
4.700	0.1055	0.30	.Q V	.	.	.	.
4.717	0.1059	0.30	.Q V	.	.	.	.
4.733	0.1063	0.30	.Q V	.	.	.	.
4.750	0.1068	0.30	.Q V	.	.	.	.
4.767	0.1072	0.30	.Q V	.	.	.	.
4.783	0.1076	0.30	.Q V	.	.	.	.
4.800	0.1080	0.30	.Q V	.	.	.	.
4.817	0.1084	0.30	.Q V	.	.	.	.
4.833	0.1089	0.30	.Q V	.	.	.	.
4.850	0.1093	0.31	.Q V	.	.	.	.
4.867	0.1097	0.31	.Q V	.	.	.	.
4.883	0.1101	0.31	.Q V	.	.	.	.
4.900	0.1105	0.31	.Q V	.	.	.	.
4.917	0.1110	0.31	.Q V	.	.	.	.
4.933	0.1114	0.31	.Q V	.	.	.	.
4.950	0.1118	0.31	.Q V	.	.	.	.
4.967	0.1122	0.31	.Q V	.	.	.	.
4.983	0.1127	0.31	.Q V	.	.	.	.
5.000	0.1131	0.31	.Q V	.	.	.	.
5.017	0.1135	0.31	.Q V	.	.	.	.
5.033	0.1139	0.31	.Q V	.	.	.	.
5.050	0.1143	0.31	.Q V	.	.	.	.
5.067	0.1148	0.31	.Q V	.	.	.	.
5.083	0.1152	0.31	.Q V	.	.	.	.
5.100	0.1156	0.31	.Q V	.	.	.	.
5.117	0.1161	0.31	.Q V	.	.	.	.
5.133	0.1165	0.31	.Q V	.	.	.	.
5.150	0.1169	0.31	.Q V	.	.	.	.
5.167	0.1173	0.31	.Q V	.	.	.	.
5.183	0.1178	0.31	.Q V	.	.	.	.
5.200	0.1182	0.31	.Q V	.	.	.	.
5.217	0.1186	0.31	.Q V	.	.	.	.
5.233	0.1190	0.31	.Q V	.	.	.	.
5.250	0.1195	0.31	.Q V	.	.	.	.

5.267	0.1199	0.31	.Q	V	.	.	.	.
5.283	0.1203	0.31	.Q	V	.	.	.	.
5.300	0.1208	0.31	.Q	V	.	.	.	.
5.317	0.1212	0.31	.Q	V	.	.	.	.
5.333	0.1216	0.31	.Q	V	.	.	.	.
5.350	0.1221	0.31	.Q	V	.	.	.	.
5.367	0.1225	0.31	.Q	V	.	.	.	.
5.383	0.1229	0.31	.Q	V	.	.	.	.
5.400	0.1234	0.31	.Q	V	.	.	.	.
5.417	0.1238	0.31	.Q	V	.	.	.	.
5.433	0.1242	0.31	.Q	V	.	.	.	.
5.450	0.1247	0.31	.Q	V	.	.	.	.
5.467	0.1251	0.31	.Q	V	.	.	.	.
5.483	0.1255	0.32	.Q	V	.	.	.	.
5.500	0.1260	0.32	.Q	V	.	.	.	.
5.517	0.1264	0.32	.Q	V	.	.	.	.
5.533	0.1268	0.32	.Q	V	.	.	.	.
5.550	0.1273	0.32	.Q	V	.	.	.	.
5.567	0.1277	0.32	.Q	V	.	.	.	.
5.583	0.1281	0.32	.Q	V	.	.	.	.
5.600	0.1286	0.32	.Q	V	.	.	.	.
5.617	0.1290	0.32	.Q	V	.	.	.	.
5.633	0.1295	0.32	.Q	V	.	.	.	.
5.650	0.1299	0.32	.Q	V	.	.	.	.
5.667	0.1303	0.32	.Q	V	.	.	.	.
5.683	0.1308	0.32	.Q	V	.	.	.	.
5.700	0.1312	0.32	.Q	V	.	.	.	.
5.717	0.1316	0.32	.Q	V	.	.	.	.
5.733	0.1321	0.32	.Q	V	.	.	.	.
5.750	0.1325	0.32	.Q	V	.	.	.	.
5.767	0.1330	0.32	.Q	V	.	.	.	.
5.783	0.1334	0.32	.Q	V	.	.	.	.
5.800	0.1339	0.32	.Q	V	.	.	.	.
5.817	0.1343	0.32	.Q	V	.	.	.	.
5.833	0.1347	0.32	.Q	V	.	.	.	.
5.850	0.1352	0.32	.Q	V	.	.	.	.
5.867	0.1356	0.32	.Q	V	.	.	.	.
5.883	0.1361	0.32	.Q	V	.	.	.	.
5.900	0.1365	0.32	.Q	V	.	.	.	.
5.917	0.1370	0.32	.Q	V	.	.	.	.
5.933	0.1374	0.32	.Q	V	.	.	.	.
5.950	0.1379	0.32	.Q	V	.	.	.	.
5.967	0.1383	0.32	.Q	V	.	.	.	.
5.983	0.1387	0.32	.Q	V	.	.	.	.
6.000	0.1392	0.32	.Q	V	.	.	.	.
6.017	0.1396	0.32	.Q	V	.	.	.	.
6.033	0.1401	0.33	.Q	V	.	.	.	.
6.050	0.1405	0.33	.Q	V	.	.	.	.
6.067	0.1410	0.33	.Q	V	.	.	.	.
6.083	0.1414	0.33	.Q	V	.	.	.	.
6.100	0.1419	0.33	.Q	V	.	.	.	.
6.117	0.1423	0.33	.Q	V	.	.	.	.
6.133	0.1428	0.33	.Q	V	.	.	.	.
6.150	0.1432	0.33	.Q	V	.	.	.	.
6.167	0.1437	0.33	.Q	V	.	.	.	.
6.183	0.1441	0.33	.Q	V	.	.	.	.
6.200	0.1446	0.33	.Q	V	.	.	.	.
6.217	0.1450	0.33	.Q	V	.	.	.	.
6.233	0.1455	0.33	.Q	V	.	.	.	.
6.250	0.1459	0.33	.Q	V	.	.	.	.
6.267	0.1464	0.33	.Q	V	.	.	.	.
6.283	0.1469	0.33	.Q	V	.	.	.	.
6.300	0.1473	0.33	.Q	V	.	.	.	.
6.317	0.1478	0.33	.Q	V	.	.	.	.
6.333	0.1482	0.33	.Q	V	.	.	.	.

6.350	0.1487	0.33	.Q	V	.	.	.	.
6.367	0.1491	0.33	.Q	V	.	.	.	.
6.383	0.1496	0.33	.Q	V	.	.	.	.
6.400	0.1500	0.33	.Q	V	.	.	.	.
6.417	0.1505	0.33	.Q	V	.	.	.	.
6.433	0.1510	0.33	.Q	V	.	.	.	.
6.450	0.1514	0.33	.Q	V	.	.	.	.
6.467	0.1519	0.33	.Q	V	.	.	.	.
6.483	0.1523	0.33	.Q	V	.	.	.	.
6.500	0.1528	0.33	.Q	V	.	.	.	.
6.517	0.1533	0.33	.Q	V	.	.	.	.
6.533	0.1537	0.33	.Q	V	.	.	.	.
6.550	0.1542	0.34	.Q	V	.	.	.	.
6.567	0.1546	0.34	.Q	V	.	.	.	.
6.583	0.1551	0.34	.Q	V	.	.	.	.
6.600	0.1556	0.34	.Q	V	.	.	.	.
6.617	0.1560	0.34	.Q	V	.	.	.	.
6.633	0.1565	0.34	.Q	V	.	.	.	.
6.650	0.1570	0.34	.Q	V	.	.	.	.
6.667	0.1574	0.34	.Q	V	.	.	.	.
6.683	0.1579	0.34	.Q	V	.	.	.	.
6.700	0.1584	0.34	.Q	V	.	.	.	.
6.717	0.1588	0.34	.Q	V	.	.	.	.
6.733	0.1593	0.34	.Q	V	.	.	.	.
6.750	0.1598	0.34	.Q	V	.	.	.	.
6.767	0.1602	0.34	.Q	V	.	.	.	.
6.783	0.1607	0.34	.Q	V	.	.	.	.
6.800	0.1612	0.34	.Q	V	.	.	.	.
6.817	0.1616	0.34	.Q	V	.	.	.	.
6.833	0.1621	0.34	.Q	V	.	.	.	.
6.850	0.1626	0.34	.Q	V	.	.	.	.
6.867	0.1630	0.34	.Q	V	.	.	.	.
6.883	0.1635	0.34	.Q	V	.	.	.	.
6.900	0.1640	0.34	.Q	V	.	.	.	.
6.917	0.1644	0.34	.Q	V	.	.	.	.
6.933	0.1649	0.34	.Q	V	.	.	.	.
6.950	0.1654	0.34	.Q	V	.	.	.	.
6.967	0.1659	0.34	.Q	V	.	.	.	.
6.983	0.1663	0.34	.Q	V	.	.	.	.
7.000	0.1668	0.34	.Q	V	.	.	.	.
7.017	0.1673	0.34	.Q	V	.	.	.	.
7.033	0.1678	0.34	.Q	V	.	.	.	.
7.050	0.1682	0.35	.Q	V	.	.	.	.
7.067	0.1687	0.35	.Q	V	.	.	.	.
7.083	0.1692	0.35	.Q	V	.	.	.	.
7.100	0.1697	0.35	.Q	V	.	.	.	.
7.117	0.1701	0.35	.Q	V	.	.	.	.
7.133	0.1706	0.35	.Q	V	.	.	.	.
7.150	0.1711	0.35	.Q	V	.	.	.	.
7.167	0.1716	0.35	.Q	V	.	.	.	.
7.183	0.1721	0.35	.Q	V	.	.	.	.
7.200	0.1725	0.35	.Q	V	.	.	.	.
7.217	0.1730	0.35	.Q	V	.	.	.	.
7.233	0.1735	0.35	.Q	V	.	.	.	.
7.250	0.1740	0.35	.Q	V	.	.	.	.
7.267	0.1745	0.35	.Q	V	.	.	.	.
7.283	0.1750	0.35	.Q	V	.	.	.	.
7.300	0.1754	0.35	.Q	V	.	.	.	.
7.317	0.1759	0.35	.Q	V	.	.	.	.
7.333	0.1764	0.35	.Q	V	.	.	.	.
7.350	0.1769	0.35	.Q	V	.	.	.	.
7.367	0.1774	0.35	.Q	V	.	.	.	.
7.383	0.1779	0.35	.Q	V	.	.	.	.
7.400	0.1783	0.35	.Q	V	.	.	.	.
7.417	0.1788	0.35	.Q	V	.	.	.	.

7.433	0.1793	0.35	.Q	V	.	.	.	.
7.450	0.1798	0.35	.Q	V	.	.	.	.
7.467	0.1803	0.35	.Q	V	.	.	.	.
7.483	0.1808	0.35	.Q	V	.	.	.	.
7.500	0.1813	0.36	.Q	V	.	.	.	.
7.517	0.1818	0.36	.Q	V	.	.	.	.
7.533	0.1823	0.36	.Q	V	.	.	.	.
7.550	0.1827	0.36	.Q	V	.	.	.	.
7.567	0.1832	0.36	.Q	V	.	.	.	.
7.583	0.1837	0.36	.Q	V	.	.	.	.
7.600	0.1842	0.36	.Q	V	.	.	.	.
7.617	0.1847	0.36	.Q	V	.	.	.	.
7.633	0.1852	0.36	.Q	V	.	.	.	.
7.650	0.1857	0.36	.Q	V	.	.	.	.
7.667	0.1862	0.36	.Q	V	.	.	.	.
7.683	0.1867	0.36	.Q	V	.	.	.	.
7.700	0.1872	0.36	.Q	V	.	.	.	.
7.717	0.1877	0.36	.Q	V	.	.	.	.
7.733	0.1882	0.36	.Q	V	.	.	.	.
7.750	0.1887	0.36	.Q	V	.	.	.	.
7.767	0.1892	0.36	.Q	V	.	.	.	.
7.783	0.1897	0.36	.Q	V	.	.	.	.
7.800	0.1902	0.36	.Q	V	.	.	.	.
7.817	0.1907	0.36	.Q	V	.	.	.	.
7.833	0.1912	0.36	.Q	V	.	.	.	.
7.850	0.1917	0.36	.Q	V	.	.	.	.
7.867	0.1922	0.36	.Q	V	.	.	.	.
7.883	0.1927	0.37	.Q	V	.	.	.	.
7.900	0.1932	0.37	.Q	V	.	.	.	.
7.917	0.1937	0.37	.Q	V	.	.	.	.
7.933	0.1942	0.37	.Q	V	.	.	.	.
7.950	0.1947	0.37	.Q	V	.	.	.	.
7.967	0.1952	0.37	.Q	V	.	.	.	.
7.983	0.1957	0.37	.Q	V	.	.	.	.
8.000	0.1962	0.37	.Q	V	.	.	.	.
8.017	0.1967	0.37	.Q	V	.	.	.	.
8.033	0.1972	0.37	.Q	V	.	.	.	.
8.050	0.1977	0.37	.Q	V	.	.	.	.
8.067	0.1982	0.37	.Q	V	.	.	.	.
8.083	0.1988	0.37	.Q	V	.	.	.	.
8.100	0.1993	0.37	.Q	V	.	.	.	.
8.117	0.1998	0.37	.Q	V	.	.	.	.
8.133	0.2003	0.37	.Q	V	.	.	.	.
8.150	0.2008	0.37	.Q	V	.	.	.	.
8.167	0.2013	0.37	.Q	V	.	.	.	.
8.183	0.2018	0.37	.Q	V	.	.	.	.
8.200	0.2023	0.37	.Q	V	.	.	.	.
8.217	0.2029	0.37	.Q	V	.	.	.	.
8.233	0.2034	0.37	.Q	V	.	.	.	.
8.250	0.2039	0.37	.Q	V	.	.	.	.
8.267	0.2044	0.37	.Q	V	.	.	.	.
8.283	0.2049	0.38	.Q	V	.	.	.	.
8.300	0.2054	0.38	.Q	V	.	.	.	.
8.317	0.2059	0.38	.Q	V	.	.	.	.
8.333	0.2065	0.38	.Q	V	.	.	.	.
8.350	0.2070	0.38	.Q	V	.	.	.	.
8.367	0.2075	0.38	.Q	V	.	.	.	.
8.383	0.2080	0.38	.Q	V	.	.	.	.
8.400	0.2086	0.38	.Q	V	.	.	.	.
8.417	0.2091	0.38	.Q	V	.	.	.	.
8.433	0.2096	0.38	.Q	V	.	.	.	.
8.450	0.2101	0.38	.Q	V	.	.	.	.
8.467	0.2106	0.38	.Q	V	.	.	.	.
8.483	0.2112	0.38	.Q	V	.	.	.	.
8.500	0.2117	0.38	.Q	V	.	.	.	.

8.517	0.2122	0.38	.Q	V	.	.	.	.
8.533	0.2127	0.38	.Q	V	.	.	.	.
8.550	0.2133	0.38	.Q	V	.	.	.	.
8.567	0.2138	0.38	.Q	V	.	.	.	.
8.583	0.2143	0.38	.Q	V	.	.	.	.
8.600	0.2149	0.38	.Q	V	.	.	.	.
8.617	0.2154	0.38	.Q	V	.	.	.	.
8.633	0.2159	0.38	.Q	V	.	.	.	.
8.650	0.2164	0.39	.Q	V	.	.	.	.
8.667	0.2170	0.39	.Q	V	.	.	.	.
8.683	0.2175	0.39	.Q	V	.	.	.	.
8.700	0.2180	0.39	.Q	V	.	.	.	.
8.717	0.2186	0.39	.Q	V	.	.	.	.
8.733	0.2191	0.39	.Q	V	.	.	.	.
8.750	0.2196	0.39	.Q	V	.	.	.	.
8.767	0.2202	0.39	.Q	V	.	.	.	.
8.783	0.2207	0.39	.Q	V	.	.	.	.
8.800	0.2213	0.39	.Q	V	.	.	.	.
8.817	0.2218	0.39	.Q	V	.	.	.	.
8.833	0.2223	0.39	.Q	V	.	.	.	.
8.850	0.2229	0.39	.Q	V	.	.	.	.
8.867	0.2234	0.39	.Q	V	.	.	.	.
8.883	0.2239	0.39	.Q	V	.	.	.	.
8.900	0.2245	0.39	.Q	V	.	.	.	.
8.917	0.2250	0.39	.Q	V	.	.	.	.
8.933	0.2256	0.39	.Q	V	.	.	.	.
8.950	0.2261	0.39	.Q	V	.	.	.	.
8.967	0.2267	0.40	.Q	V	.	.	.	.
8.983	0.2272	0.40	.Q	V	.	.	.	.
9.000	0.2277	0.40	.Q	V	.	.	.	.
9.017	0.2283	0.40	.Q	V	.	.	.	.
9.033	0.2288	0.40	.Q	V	.	.	.	.
9.050	0.2294	0.40	.Q	V	.	.	.	.
9.067	0.2299	0.40	.Q	V	.	.	.	.
9.083	0.2305	0.40	.Q	V	.	.	.	.
9.100	0.2310	0.40	.Q	V	.	.	.	.
9.117	0.2316	0.40	.Q	V	.	.	.	.
9.133	0.2321	0.40	.Q	V	.	.	.	.
9.150	0.2327	0.40	.Q	V	.	.	.	.
9.167	0.2332	0.40	.Q	V	.	.	.	.
9.183	0.2338	0.40	.Q	V	.	.	.	.
9.200	0.2344	0.40	.Q	V	.	.	.	.
9.217	0.2349	0.40	.Q	V	.	.	.	.
9.233	0.2355	0.40	.Q	V	.	.	.	.
9.250	0.2360	0.40	.Q	V	.	.	.	.
9.267	0.2366	0.41	.Q	V	.	.	.	.
9.283	0.2371	0.41	.Q	V	.	.	.	.
9.300	0.2377	0.41	.Q	V	.	.	.	.
9.317	0.2383	0.41	.Q	V	.	.	.	.
9.333	0.2388	0.41	.Q	V	.	.	.	.
9.350	0.2394	0.41	.Q	V	.	.	.	.
9.367	0.2399	0.41	.Q	V	.	.	.	.
9.383	0.2405	0.41	.Q	V	.	.	.	.
9.400	0.2411	0.41	.Q	V	.	.	.	.
9.417	0.2416	0.41	.Q	V	.	.	.	.
9.433	0.2422	0.41	.Q	V	.	.	.	.
9.450	0.2428	0.41	.Q	V	.	.	.	.
9.467	0.2433	0.41	.Q	V	.	.	.	.
9.483	0.2439	0.41	.Q	V	.	.	.	.
9.500	0.2445	0.41	.Q	V	.	.	.	.
9.517	0.2450	0.41	.Q	V	.	.	.	.
9.533	0.2456	0.41	.Q	V	.	.	.	.
9.550	0.2462	0.41	.Q	V	.	.	.	.
9.567	0.2467	0.41	.Q	V	.	.	.	.
9.583	0.2473	0.42	.Q	V	.	.	.	.

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 9.600      0.2479      0.42  .Q      V .          .          .          .
 9.617      0.2485      0.42  .Q      V .          .          .          .
 9.633      0.2490      0.42  .Q      V .          .          .          .
 9.650      0.2496      0.42  .Q      V .          .          .          .
 9.667      0.2502      0.42  .Q      V .          .          .          .
 9.683      0.2508      0.42  .Q      V .          .          .          .
 9.700      0.2514      0.42  .Q      V .          .          .          .
 9.717      0.2519      0.42  .Q      V .          .          .          .
 9.733      0.2525      0.42  .Q      V .          .          .          .
 9.750      0.2531      0.42  .Q      V .          .          .          .
 9.767      0.2537      0.42  .Q      V .          .          .          .
 9.783      0.2543      0.42  .Q      V .          .          .          .
 9.800      0.2548      0.42  .Q      V .          .          .          .
 9.817      0.2554      0.42  .Q      V .          .          .          .
 9.833      0.2560      0.42  .Q      V .          .          .          .
 9.850      0.2566      0.43  .Q      V .          .          .          .
 9.867      0.2572      0.43  .Q      V .          .          .          .
 9.883      0.2578      0.43  .Q      V .          .          .          .
 9.900      0.2584      0.43  .Q      V .          .          .          .
 9.917      0.2590      0.43  .Q      V .          .          .          .
 9.933      0.2595      0.43  .Q      V .          .          .          .
 9.950      0.2601      0.43  .Q      V .          .          .          .
 9.967      0.2607      0.43  .Q      V .          .          .          .
 9.983      0.2613      0.43  .Q      V .          .          .          .
10.000      0.2619      0.43  .Q      V .          .          .          .
10.017      0.2625      0.43  .Q      V .          .          .          .
10.033      0.2631      0.43  .Q       V.          .          .          .
10.050      0.2637      0.43  .Q       V.          .          .          .
10.067      0.2643      0.43  .Q       V.          .          .          .
10.083      0.2649      0.43  .Q       V.          .          .          .
10.100      0.2655      0.44  .Q       V.          .          .          .
10.117      0.2661      0.44  .Q       V.          .          .          .
10.133      0.2667      0.44  .Q       V.          .          .          .
10.150      0.2673      0.44  .Q       V.          .          .          .
10.167      0.2679      0.44  .Q       V.          .          .          .
10.183      0.2685      0.44  .Q       V.          .          .          .
10.200      0.2691      0.44  .Q       V.          .          .          .
10.217      0.2697      0.44  .Q       V.          .          .          .
10.233      0.2703      0.44  .Q       V.          .          .          .
10.250      0.2709      0.44  .Q       V.          .          .          .
10.267      0.2716      0.44  .Q       V.          .          .          .
10.283      0.2722      0.44  .Q       V.          .          .          .
10.300      0.2728      0.44  .Q       V.          .          .          .
10.317      0.2734      0.44  .Q       V.          .          .          .
10.333      0.2740      0.45  .Q       V.          .          .          .
10.350      0.2746      0.45  .Q       V.          .          .          .
10.367      0.2752      0.45  .Q       V.          .          .          .
10.383      0.2758      0.45  .Q       V.          .          .          .
10.400      0.2765      0.45  .Q       V.          .          .          .
10.417      0.2771      0.45  .Q       V.          .          .          .
10.433      0.2777      0.45  .Q       V.          .          .          .
10.450      0.2783      0.45  .Q       V.          .          .          .
10.467      0.2789      0.45  .Q       V.          .          .          .
10.483      0.2796      0.45  .Q       V.          .          .          .
10.500      0.2802      0.45  .Q       V.          .          .          .
10.517      0.2808      0.45  .Q       V.          .          .          .
10.533      0.2814      0.45  .Q       V.          .          .          .
10.550      0.2821      0.45  .Q       V.          .          .          .
10.567      0.2827      0.46  .Q       V.          .          .          .
10.583      0.2833      0.46  .Q       V.          .          .          .
10.600      0.2840      0.46  .Q       V.          .          .          .
10.617      0.2846      0.46  .Q       V.          .          .          .
10.633      0.2852      0.46  .Q       V.          .          .          .
10.650      0.2859      0.46  .Q       V.          .          .          .
10.667      0.2865      0.46  .Q       V.          .          .          .
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10.683	0.2871	0.46	.Q	V.	.	.	.
10.700	0.2878	0.46	.Q	V.	.	.	.
10.717	0.2884	0.46	.Q	V.	.	.	.
10.733	0.2890	0.46	.Q	V.	.	.	.
10.750	0.2897	0.46	.Q	V.	.	.	.
10.767	0.2903	0.47	.Q	V.	.	.	.
10.783	0.2910	0.47	.Q	V.	.	.	.
10.800	0.2916	0.47	.Q	V.	.	.	.
10.817	0.2923	0.47	.Q	V	.	.	.
10.833	0.2929	0.47	.Q	V	.	.	.
10.850	0.2935	0.47	.Q	V	.	.	.
10.867	0.2942	0.47	.Q	V	.	.	.
10.883	0.2948	0.47	.Q	V	.	.	.
10.900	0.2955	0.47	.Q	V	.	.	.
10.917	0.2961	0.47	.Q	V	.	.	.
10.933	0.2968	0.47	.Q	V	.	.	.
10.950	0.2975	0.47	.Q	V	.	.	.
10.967	0.2981	0.47	.Q	V	.	.	.
10.983	0.2988	0.48	.Q	V	.	.	.
11.000	0.2994	0.48	.Q	V	.	.	.
11.017	0.3001	0.48	.Q	V	.	.	.
11.033	0.3007	0.48	.Q	V	.	.	.
11.050	0.3014	0.48	.Q	V	.	.	.
11.067	0.3021	0.48	.Q	V	.	.	.
11.083	0.3027	0.48	.Q	V	.	.	.
11.100	0.3034	0.48	.Q	V	.	.	.
11.117	0.3041	0.48	.Q	V	.	.	.
11.133	0.3047	0.48	.Q	V	.	.	.
11.150	0.3054	0.49	.Q	V	.	.	.
11.167	0.3061	0.49	.Q	V	.	.	.
11.183	0.3067	0.49	.Q	V	.	.	.
11.200	0.3074	0.49	.Q	V	.	.	.
11.217	0.3081	0.49	.Q	V	.	.	.
11.233	0.3088	0.49	.Q	V	.	.	.
11.250	0.3094	0.49	.Q	V	.	.	.
11.267	0.3101	0.49	.Q	V	.	.	.
11.283	0.3108	0.49	.Q	V	.	.	.
11.300	0.3115	0.49	.Q	V	.	.	.
11.317	0.3122	0.50	.Q	V	.	.	.
11.333	0.3128	0.50	.Q	V	.	.	.
11.350	0.3135	0.50	.Q	V	.	.	.
11.367	0.3142	0.50	.Q	V	.	.	.
11.383	0.3149	0.50	.Q	V	.	.	.
11.400	0.3156	0.50	.Q	V	.	.	.
11.417	0.3163	0.50	.Q	V	.	.	.
11.433	0.3170	0.50	.Q	V	.	.	.
11.450	0.3177	0.50	.Q	V	.	.	.
11.467	0.3184	0.50	.Q	V	.	.	.
11.483	0.3190	0.51	.Q	V	.	.	.
11.500	0.3197	0.51	.Q	V	.	.	.
11.517	0.3204	0.51	.Q	V	.	.	.
11.533	0.3211	0.51	.Q	V	.	.	.
11.550	0.3218	0.51	.Q	.V	.	.	.
11.567	0.3226	0.51	.Q	.V	.	.	.
11.583	0.3233	0.51	.Q	.V	.	.	.
11.600	0.3240	0.51	.Q	.V	.	.	.
11.617	0.3247	0.51	.Q	.V	.	.	.
11.633	0.3254	0.51	.Q	.V	.	.	.
11.650	0.3261	0.51	.Q	.V	.	.	.
11.667	0.3268	0.52	.Q	.V	.	.	.
11.683	0.3275	0.52	.Q	.V	.	.	.
11.700	0.3282	0.52	.Q	.V	.	.	.
11.717	0.3289	0.52	.Q	.V	.	.	.
11.733	0.3297	0.52	.Q	.V	.	.	.
11.750	0.3304	0.52	.Q	.V	.	.	.

```
11.767      0.3311      0.52  .Q        .V        .         .         .
11.783      0.3318      0.53  .Q        .V        .         .         .
11.800      0.3326      0.53  .Q        .V        .         .         .
11.817      0.3333      0.53  .Q        .V        .         .         .
11.833      0.3340      0.53  .Q        .V        .         .         .
11.850      0.3347      0.53  .Q        .V        .         .         .
11.867      0.3355      0.53  .Q        .V        .         .         .
11.883      0.3362      0.53  .Q        .V        .         .         .
11.900      0.3369      0.53  .Q        .V        .         .         .
11.917      0.3377      0.53  .Q        .V        .         .         .
11.933      0.3384      0.54  .Q        .V        .         .         .
11.950      0.3391      0.54  .Q        .V        .         .         .
11.967      0.3399      0.54  .Q        .V        .         .         .
11.983      0.3406      0.54  .Q        .V        .         .         .
12.000      0.3414      0.54  .Q        .V        .         .         .
12.017      0.3421      0.54  .Q        .V        .         .         .
12.033      0.3429      0.55  .Q        .V        .         .         .
12.050      0.3436      0.55  .Q        .V        .         .         .
12.067      0.3444      0.55  .Q        .V        .         .         .
12.083      0.3452      0.56  .Q        .V        .         .         .
12.100      0.3459      0.56  . Q       .V        .         .         .
12.117      0.3467      0.57  . Q       .V        .         .         .
12.133      0.3475      0.57  . Q       .V        .         .         .
12.150      0.3483      0.58  . Q       .V        .         .         .
12.167      0.3491      0.58  . Q       .V        .         .         .
12.183      0.3499      0.59  . Q       .V        .         .         .
12.200      0.3507      0.59  . Q       . V       .         .         .
12.217      0.3515      0.60  . Q       . V       .         .         .
12.233      0.3524      0.60  . Q       . V       .         .         .
12.250      0.3532      0.60  . Q       . V       .         .         .
12.267      0.3540      0.60  . Q       . V       .         .         .
12.283      0.3549      0.60  . Q       . V       .         .         .
12.300      0.3557      0.61  . Q       . V       .         .         .
12.317      0.3565      0.61  . Q       . V       .         .         .
12.333      0.3574      0.61  . Q       . V       .         .         .
12.350      0.3582      0.61  . Q       . V       .         .         .
12.367      0.3591      0.61  . Q       . V       .         .         .
12.383      0.3599      0.61  . Q       . V       .         .         .
12.400      0.3608      0.61  . Q       . V       .         .         .
12.417      0.3616      0.62  . Q       . V       .         .         .
12.433      0.3625      0.62  . Q       . V       .         .         .
12.450      0.3633      0.62  . Q       . V       .         .         .
12.467      0.3642      0.62  . Q       . V       .         .         .
12.483      0.3650      0.62  . Q       . V       .         .         .
12.500      0.3659      0.62  . Q       . V       .         .         .
12.517      0.3667      0.63  . Q       . V       .         .         .
12.533      0.3676      0.63  . Q       . V       .         .         .
12.550      0.3685      0.63  . Q       . V       .         .         .
12.567      0.3693      0.63  . Q       . V       .         .         .
12.583      0.3702      0.63  . Q       . V       .         .         .
12.600      0.3711      0.63  . Q       . V       .         .         .
12.617      0.3720      0.63  . Q       . V       .         .         .
12.633      0.3728      0.64  . Q       . V       .         .         .
12.650      0.3737      0.64  . Q       . V       .         .         .
12.667      0.3746      0.64  . Q       . V       .         .         .
12.683      0.3755      0.64  . Q       . V       .         .         .
12.700      0.3764      0.64  . Q       . V       .         .         .
12.717      0.3773      0.65  . Q       . V       .         .         .
12.733      0.3781      0.65  . Q       . V       .         .         .
12.750      0.3790      0.65  . Q       . V       .         .         .
12.767      0.3799      0.65  . Q       .  V      .         .         .
12.783      0.3808      0.65  . Q       .  V      .         .         .
12.800      0.3817      0.65  . Q       .  V      .         .         .
12.817      0.3826      0.65  . Q       .  V      .         .         .
12.833      0.3835      0.66  . Q       .  V      .         .         .
```

12.850	0.3844	0.66	. Q	.	V	.	.	.
12.867	0.3854	0.66	. Q	.	V	.	.	.
12.883	0.3863	0.66	. Q	.	V	.	.	.
12.900	0.3872	0.67	. Q	.	V	.	.	.
12.917	0.3881	0.67	. Q	.	V	.	.	.
12.933	0.3890	0.67	. Q	.	V	.	.	.
12.950	0.3899	0.67	. Q	.	V	.	.	.
12.967	0.3909	0.67	. Q	.	V	.	.	.
12.983	0.3918	0.67	. Q	.	V	.	.	.
13.000	0.3927	0.67	. Q	.	V	.	.	.
13.017	0.3937	0.68	. Q	.	V	.	.	.
13.033	0.3946	0.68	. Q	.	V	.	.	.
13.050	0.3955	0.68	. Q	.	V	.	.	.
13.067	0.3965	0.68	. Q	.	V	.	.	.
13.083	0.3974	0.69	. Q	.	V	.	.	.
13.100	0.3984	0.69	. Q	.	V	.	.	.
13.117	0.3993	0.69	. Q	.	V	.	.	.
13.133	0.4003	0.69	. Q	.	V	.	.	.
13.150	0.4012	0.70	. Q	.	V	.	.	.
13.167	0.4022	0.70	. Q	.	V	.	.	.
13.183	0.4031	0.70	. Q	.	V	.	.	.
13.200	0.4041	0.70	. Q	.	V	.	.	.
13.217	0.4051	0.70	. Q	.	V	.	.	.
13.233	0.4060	0.70	. Q	.	V	.	.	.
13.250	0.4070	0.70	. Q	.	V	.	.	.
13.267	0.4080	0.71	. Q	.	V	.	.	.
13.283	0.4090	0.71	. Q	.	V	.	.	.
13.300	0.4100	0.71	. Q	.	V	.	.	.
13.317	0.4109	0.72	. Q	.	V	.	.	.
13.333	0.4119	0.72	. Q	.	V	.	.	.
13.350	0.4129	0.72	. Q	.	V	.	.	.
13.367	0.4139	0.72	. Q	.	V	.	.	.
13.383	0.4149	0.73	. Q	.	V	.	.	.
13.400	0.4159	0.73	. Q	.	V	.	.	.
13.417	0.4169	0.73	. Q	.	V	.	.	.
13.433	0.4179	0.73	. Q	.	V	.	.	.
13.450	0.4189	0.73	. Q	.	V	.	.	.
13.467	0.4200	0.74	. Q	.	V	.	.	.
13.483	0.4210	0.74	. Q	.	V	.	.	.
13.500	0.4220	0.74	. Q	.	V	.	.	.
13.517	0.4230	0.74	. Q	.	V	.	.	.
13.533	0.4240	0.75	. Q	.	V	.	.	.
13.550	0.4251	0.75	. Q	.	V	.	.	.
13.567	0.4261	0.75	. Q	.	V	.	.	.
13.583	0.4272	0.76	. Q	.	V	.	.	.
13.600	0.4282	0.76	. Q	.	V	.	.	.
13.617	0.4293	0.76	. Q	.	V	.	.	.
13.633	0.4303	0.76	. Q	.	V	.	.	.
13.650	0.4314	0.77	. Q	.	V	.	.	.
13.667	0.4324	0.77	. Q	.	V	.	.	.
13.683	0.4335	0.77	. Q	.	V	.	.	.
13.700	0.4345	0.77	. Q	.	V	.	.	.
13.717	0.4356	0.77	. Q	.	V	.	.	.
13.733	0.4367	0.78	. Q	.	V	.	.	.
13.750	0.4378	0.78	. Q	.	V	.	.	.
13.767	0.4388	0.79	. Q	.	V	.	.	.
13.783	0.4399	0.79	. Q	.	V	.	.	.
13.800	0.4410	0.79	. Q	.	V	.	.	.
13.817	0.4421	0.80	. Q	.	V	.	.	.
13.833	0.4432	0.80	. Q	.	V	.	.	.
13.850	0.4443	0.80	. Q	.	V	.	.	.
13.867	0.4454	0.81	. Q	.	V	.	.	.
13.883	0.4466	0.81	. Q	.	V	.	.	.
13.900	0.4477	0.81	. Q	.	V	.	.	.
13.917	0.4488	0.81	. Q	.	V	.	.	.

13.933	0.4499	0.81	.	Q	.			V	.		.	.
13.950	0.4510	0.82	.	Q	.			V	.		.	.
13.967	0.4522	0.82	.	Q	.			V	.		.	.
13.983	0.4533	0.83	.	Q	.			V	.		.	.
14.000	0.4545	0.83	.	Q	.			V	.		.	.
14.017	0.4556	0.84	.	Q	.			V	.		.	.
14.033	0.4568	0.84	.		Q	.		V	.		.	.
14.050	0.4579	0.85	.		Q	.		V	.		.	.
14.067	0.4591	0.85	.		Q	.		V	.		.	.
14.083	0.4603	0.86	.		Q	.		V	.		.	.
14.100	0.4615	0.86	.		Q	.		V	.		.	.
14.117	0.4627	0.87	.		Q	.		V	.		.	.
14.133	0.4639	0.87	.		Q	.		V	.		.	.
14.150	0.4651	0.87	.		Q	.		V	.		.	.
14.167	0.4663	0.88	.		Q	.		V	.		.	.
14.183	0.4675	0.88	.		Q	.			V	.	.	.
14.200	0.4687	0.89	.		Q	.			V	.	.	.
14.217	0.4699	0.89	.		Q	.			V	.	.	.
14.233	0.4712	0.90	.		Q	.			V	.	.	.
14.250	0.4724	0.91	.		Q	.			V	.	.	.
14.267	0.4737	0.91	.		Q	.			V	.	.	.
14.283	0.4749	0.92	.		Q	.			V	.	.	.
14.300	0.4762	0.92	.		Q	.			V	.	.	.
14.317	0.4775	0.92	.		Q	.			V	.	.	.
14.333	0.4788	0.93	.		Q	.			V	.	.	.
14.350	0.4800	0.93	.		Q	.			V	.	.	.
14.367	0.4813	0.93	.		Q	.			V	.	.	.
14.383	0.4826	0.94	.		Q	.			V	.	.	.
14.400	0.4839	0.94	.		Q	.			V	.	.	.
14.417	0.4852	0.94	.		Q	.			V	.	.	.
14.433	0.4865	0.95	.		Q	.			V	.	.	.
14.450	0.4878	0.96	.		Q	.			V	.	.	.
14.467	0.4892	0.97	.		Q	.			V	.	.	.
14.483	0.4905	0.97	.		Q	.			V	.	.	.
14.500	0.4919	0.98	.		Q	.			V	.	.	.
14.517	0.4932	0.99	.		Q	.			V	.	.	.
14.533	0.4946	0.99	.		Q	.			V	.	.	.
14.550	0.4960	0.99	.		Q	.			V	.	.	.
14.567	0.4973	1.00	.		Q	.				V	.	.
14.583	0.4987	1.00	.		Q	.				V	.	.
14.600	0.5001	1.01	.		Q	.				V	.	.
14.617	0.5015	1.01	.		Q	.				V	.	.
14.633	0.5029	1.01	.		Q	.				V	.	.
14.650	0.5043	1.02	.		Q	.				V	.	.
14.667	0.5057	1.03	.		Q	.				V	.	.
14.683	0.5071	1.04	.		Q	.				V	.	.
14.700	0.5086	1.05	.		Q	.				V	.	.
14.717	0.5100	1.06	.		Q	.				V	.	.
14.733	0.5115	1.06	.		Q	.				V	.	.
14.750	0.5130	1.07	.		Q	.				V	.	.
14.767	0.5145	1.08	.		Q	.				V	.	.
14.783	0.5160	1.08	.		Q	.				V	.	.
14.800	0.5175	1.09	.		Q	.				V	.	.
14.817	0.5190	1.09	.		Q	.				V	.	.
14.833	0.5205	1.10	.		Q	.				V	.	.
14.850	0.5220	1.10	.		Q	.				V	.	.
14.867	0.5235	1.11	.		Q	.				V	.	.
14.883	0.5251	1.12	.			Q	.			V	.	.
14.900	0.5266	1.13	.			Q	.				V	.
14.917	0.5282	1.14	.			Q	.				V	.
14.933	0.5298	1.15	.			Q	.				V	.
14.950	0.5314	1.16	.			Q	.				V	.
14.967	0.5330	1.18	.			Q	.				V	.
14.983	0.5346	1.19	.			Q	.				V	.
15.000	0.5363	1.19	.			Q	.				V	.

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15.017      0.5379      1.20  .   Q     .       V .         .         .
15.033      0.5396      1.21  .   Q     .       V .         .         .
15.050      0.5413      1.21  .   Q     .       V .         .         .
15.067      0.5429      1.22  .   Q     .       V .         .         .
15.083      0.5446      1.23  .   Q     .       V .         .         .
15.100      0.5463      1.24  .   Q     .       V .         .         .
15.117      0.5481      1.25  .   Q     .       V .         .         .
15.133      0.5498      1.27  .   Q     .       V .         .         .
15.150      0.5516      1.28  .   Q     .       V .         .         .
15.167      0.5534      1.30  .   Q     .       V .         .         .
15.183      0.5552      1.31  .   Q     .        V.         .         .
15.200      0.5570      1.33  .   Q     .        V.         .         .
15.217      0.5588      1.34  .   Q     .        V.         .         .
15.233      0.5607      1.35  .   Q     .        V.         .         .
15.250      0.5626      1.36  .   Q     .        V.         .         .
15.267      0.5645      1.37  .   Q     .        V.         .         .
15.283      0.5664      1.38  .   Q     .        V.         .         .
15.300      0.5683      1.39  .   Q     .        V.         .         .
15.317      0.5702      1.40  .    Q    .        V.         .         .
15.333      0.5722      1.43  .    Q    .        V.         .         .
15.350      0.5742      1.47  .    Q    .        V.         .         .
15.367      0.5763      1.51  .    Q    .        V.         .         .
15.383      0.5784      1.55  .    Q    .        V.         .         .
15.400      0.5806      1.59  .    Q    .        V.         .         .
15.417      0.5828      1.63  .    Q    .        V.         .         .
15.433      0.5851      1.66  .    Q    .         V         .         .
15.450      0.5875      1.69  .     Q   .         V         .         .
15.467      0.5898      1.71  .     Q   .         V         .         .
15.483      0.5922      1.73  .     Q   .         V         .         .
15.500      0.5946      1.75  .     Q   .         V         .         .
15.517      0.5970      1.77  .     Q   .         V         .         .
15.533      0.5995      1.79  .     Q   .         V         .         .
15.550      0.6020      1.82  .     Q   .         V         .         .
15.567      0.6046      1.86  .     Q   .         V         .         .
15.583      0.6072      1.90  .     Q   .         V         .         .
15.600      0.6099      1.94  .     Q   .         V         .         .
15.617      0.6126      1.98  .      Q  .         V         .         .
15.633      0.6154      2.03  .      Q  .         .V        .         .
15.650      0.6182      2.07  .      Q  .         .V        .         .
15.667      0.6211      2.11  .      Q  .         .V        .         .
15.683      0.6241      2.14  .      Q  .         .V        .         .
15.700      0.6271      2.18  .      Q  .         .V        .         .
15.717      0.6301      2.21  .      Q  .         .V        .         .
15.733      0.6332      2.24  .       Q .         .V        .         .
15.750      0.6363      2.27  .       Q .         .V        .         .
15.767      0.6395      2.31  .       Q .         .V        .         .
15.783      0.6428      2.37  .       Q .         . V       .         .
15.800      0.6462      2.49  .       Q .         . V       .         .
15.817      0.6498      2.62  .        Q.         . V       .         .
15.833      0.6536      2.75  .        Q.         . V       .         .
15.850      0.6576      2.88  .         Q         . V       .         .
15.867      0.6617      3.01  .         Q         . V       .         .
15.883      0.6661      3.14  .         .Q        . V       .         .
15.900      0.6706      3.29  .         .Q        . V       .         .
15.917      0.6754      3.46  .         . Q       .  V      .         .
15.933      0.6804      3.63  .         .  Q      .  V      .         .
15.950      0.6856      3.80  .         .  Q      .  V      .         .
15.967      0.6911      3.98  .         .   Q     .  V      .         .
15.983      0.6968      4.15  .         .   Q     .  V      .         .
16.000      0.7028      4.32  .         .    Q    .   V     .         .
16.017      0.7095      4.90  .         .      Q  .   V     .         .
16.033      0.7176      5.88  .         .         .Q  V     .         .
16.050      0.7271      6.87  .         .         .   Q     .         .
16.067      0.7379      7.86  .         .         .    V  Q .         .
16.083      0.7501      8.84  .         .         .    V    .Q        .
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16.100      0.7636      9.83  .         .         .     V   .    Q    .
16.117      0.7790     11.18  .         .         .     V   .         Q
16.133      0.7933     10.39  .         .         .      V  .       Q  .
16.150      0.8059      9.15  .         .         .      V  . Q        .
16.167      0.8168      7.91  .         .         .      VQ .          .
16.183      0.8260      6.67  .         .         .  Q    V .          .
16.200      0.8335      5.43  .         .        Q.       V .          .
16.217      0.8393      4.19  .         .    Q    .       V .          .
16.233      0.8434      2.99  .         Q         .       V .          .
16.250      0.8469      2.57  .        Q.         .        V.          .
16.267      0.8503      2.47  .       Q .         .        V.          .
16.283      0.8536      2.37  .       Q .         .        V.          .
16.300      0.8567      2.26  .       Q .         .        V.          .
16.317      0.8597      2.16  .      Q  .         .        V.          .
16.333      0.8625      2.06  .      Q  .         .        V.          .
16.350      0.8652      1.96  .      Q  .         .        V.          .
16.367      0.8678      1.88  .     Q   .         .        V.          .
16.383      0.8703      1.82  .     Q   .         .        V.          .
16.400      0.8727      1.75  .     Q   .         .        V.          .
16.417      0.8750      1.68  .     Q   .         .        V.          .
16.433      0.8773      1.61  .    Q    .         .         V          .
16.450      0.8794      1.54  .    Q    .         .         V          .
16.467      0.8814      1.48  .    Q    .         .         V          .
16.483      0.8834      1.45  .    Q    .         .         V          .
16.500      0.8854      1.42  .    Q    .         .         V          .
16.517      0.8873      1.39  .   Q     .         .         V          .
16.533      0.8892      1.36  .   Q     .         .         V          .
16.550      0.8910      1.33  .   Q     .         .         V          .
16.567      0.8928      1.30  .   Q     .         .         V          .
16.583      0.8946      1.28  .   Q     .         .         V          .
16.600      0.8963      1.26  .   Q     .         .         V          .
16.617      0.8980      1.24  .   Q     .         .         V          .
16.633      0.8997      1.22  .   Q     .         .         V          .
16.650      0.9013      1.20  .   Q     .         .         V          .
16.667      0.9029      1.18  .   Q     .         .         V          .
16.683      0.9045      1.16  .   Q     .         .         V          .
16.700      0.9061      1.14  .   Q     .         .         .V         .
16.717      0.9077      1.12  .   Q     .         .         .V         .
16.733      0.9092      1.11  .  Q      .         .         .V         .
16.750      0.9107      1.09  .  Q      .         .         .V         .
16.767      0.9122      1.08  .  Q      .         .         .V         .
16.783      0.9137      1.07  .  Q      .         .         .V         .
16.800      0.9151      1.05  .  Q      .         .         .V         .
16.817      0.9165      1.04  .  Q      .         .         .V         .
16.833      0.9179      1.03  .  Q      .         .         .V         .
16.850      0.9193      1.01  .  Q      .         .         .V         .
16.867      0.9207      1.00  .  Q      .         .         .V         .
16.883      0.9221      0.99  .  Q      .         .         .V         .
16.900      0.9234      0.98  .  Q      .         .         .V         .
16.917      0.9248      0.97  .  Q      .         .         .V         .
16.933      0.9261      0.96  .  Q      .         .         .V         .
16.950      0.9274      0.95  .  Q      .         .         .V         .
16.967      0.9287      0.94  .  Q      .         .         .V         .
16.983      0.9300      0.93  .  Q      .         .         .V         .
17.000      0.9312      0.92  .  Q      .         .         .V         .
17.017      0.9325      0.91  .  Q      .         .         .V         .
17.033      0.9337      0.90  .  Q      .         .         .V         .
17.050      0.9350      0.89  .  Q      .         .         . V        .
17.067      0.9362      0.88  .  Q      .         .         . V        .
17.083      0.9374      0.87  .  Q      .         .         . V        .
17.100      0.9386      0.86  .  Q      .         .         . V        .
17.117      0.9397      0.85  .  Q      .         .         . V        .
17.133      0.9409      0.84  .  Q      .         .         . V        .
17.150      0.9421      0.83  . Q       .         .         . V        .
17.167      0.9432      0.83  . Q       .         .         . V        .
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17.183      0.9443      0.82  . Q       .         .         . V       .
17.200      0.9454      0.81  . Q       .         .         . V       .
17.217      0.9466      0.81  . Q       .         .         . V       .
17.233      0.9477      0.80  . Q       .         .         . V       .
17.250      0.9488      0.79  . Q       .         .         . V       .
17.267      0.9498      0.79  . Q       .         .         . V       .
17.283      0.9509      0.78  . Q       .         .         . V       .
17.300      0.9520      0.78  . Q       .         .         . V       .
17.317      0.9530      0.77  . Q       .         .         . V       .
17.333      0.9541      0.77  . Q       .         .         . V       .
17.350      0.9551      0.76  . Q       .         .         . V       .
17.367      0.9562      0.75  . Q       .         .         . V       .
17.383      0.9572      0.75  . Q       .         .         . V       .
17.400      0.9582      0.74  . Q       .         .         . V       .
17.417      0.9593      0.74  . Q       .         .         . V       .
17.433      0.9603      0.73  . Q       .         .         . V       .
17.450      0.9613      0.73  . Q       .         .         . V       .
17.467      0.9623      0.72  . Q       .         .         . V       .
17.483      0.9633      0.72  . Q       .         .         . V       .
17.500      0.9642      0.71  . Q       .         .         .  V      .
17.517      0.9652      0.71  . Q       .         .         .  V      .
17.533      0.9662      0.71  . Q       .         .         .  V      .
17.550      0.9672      0.70  . Q       .         .         .  V      .
17.567      0.9681      0.70  . Q       .         .         .  V      .
17.583      0.9691      0.69  . Q       .         .         .  V      .
17.600      0.9700      0.69  . Q       .         .         .  V      .
17.617      0.9710      0.68  . Q       .         .         .  V      .
17.633      0.9719      0.68  . Q       .         .         .  V      .
17.650      0.9728      0.68  . Q       .         .         .  V      .
17.667      0.9738      0.67  . Q       .         .         .  V      .
17.683      0.9747      0.67  . Q       .         .         .  V      .
17.700      0.9756      0.67  . Q       .         .         .  V      .
17.717      0.9765      0.66  . Q       .         .         .  V      .
17.733      0.9774      0.66  . Q       .         .         .  V      .
17.750      0.9783      0.65  . Q       .         .         .  V      .
17.767      0.9792      0.65  . Q       .         .         .  V      .
17.783      0.9801      0.65  . Q       .         .         .  V      .
17.800      0.9810      0.64  . Q       .         .         .  V      .
17.817      0.9819      0.64  . Q       .         .         .  V      .
17.833      0.9828      0.64  . Q       .         .         .  V      .
17.850      0.9836      0.63  . Q       .         .         .  V      .
17.867      0.9845      0.63  . Q       .         .         .  V      .
17.883      0.9854      0.63  . Q       .         .         .  V      .
17.900      0.9862      0.63  . Q       .         .         .  V      .
17.917      0.9871      0.62  . Q       .         .         .  V      .
17.933      0.9879      0.62  . Q       .         .         .  V      .
17.950      0.9888      0.62  . Q       .         .         .  V      .
17.967      0.9896      0.61  . Q       .         .         .  V      .
17.983      0.9905      0.61  . Q       .         .         .  V      .
18.000      0.9913      0.61  . Q       .         .         .  V      .
18.017      0.9922      0.60  . Q       .         .         .  V      .
18.033      0.9930      0.60  . Q       .         .         .   V     .
18.050      0.9938      0.60  . Q       .         .         .   V     .
18.067      0.9946      0.60  . Q       .         .         .   V     .
18.083      0.9954      0.59  . Q       .         .         .   V     .
18.100      0.9962      0.58  . Q       .         .         .   V     .
18.117      0.9970      0.57  . Q       .         .         .   V     .
18.133      0.9978      0.56  . Q       .         .         .   V     .
18.150      0.9986      0.55  .Q        .         .         .   V     .
18.167      0.9993      0.54  .Q        .         .         .   V     .
18.183      1.0000      0.54  .Q        .         .         .   V     .
18.200      1.0008      0.53  .Q        .         .         .   V     .
18.217      1.0015      0.53  .Q        .         .         .   V     .
18.233      1.0022      0.53  .Q        .         .         .   V     .
18.250      1.0030      0.53  .Q        .         .         .   V     .
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18.267	1.0037	0.52	.Q	.	.	.	V	.
18.283	1.0044	0.52	.Q	.	.	.	V	.
18.300	1.0051	0.52	.Q	.	.	.	V	.
18.317	1.0058	0.52	.Q	.	.	.	V	.
18.333	1.0066	0.52	.Q	.	.	.	V	.
18.350	1.0073	0.51	.Q	.	.	.	V	.
18.367	1.0080	0.51	.Q	.	.	.	V	.
18.383	1.0087	0.51	.Q	.	.	.	V	.
18.400	1.0094	0.51	.Q	.	.	.	V	.
18.417	1.0101	0.50	.Q	.	.	.	V	.
18.433	1.0107	0.50	.Q	.	.	.	V	.
18.450	1.0114	0.50	.Q	.	.	.	V	.
18.467	1.0121	0.50	.Q	.	.	.	V	.
18.483	1.0128	0.50	.Q	.	.	.	V	.
18.500	1.0135	0.49	.Q	.	.	.	V	.
18.517	1.0142	0.49	.Q	.	.	.	V	.
18.533	1.0148	0.49	.Q	.	.	.	V	.
18.550	1.0155	0.49	.Q	.	.	.	V	.
18.567	1.0162	0.49	.Q	.	.	.	V	.
18.583	1.0169	0.49	.Q	.	.	.	V	.
18.600	1.0175	0.48	.Q	.	.	.	V	.
18.617	1.0182	0.48	.Q	.	.	.	V	.
18.633	1.0189	0.48	.Q	.	.	.	V	.
18.650	1.0195	0.48	.Q	.	.	.	V	.
18.667	1.0202	0.48	.Q	.	.	.	V	.
18.683	1.0208	0.47	.Q	.	.	.	V	.
18.700	1.0215	0.47	.Q	.	.	.	V	.
18.717	1.0221	0.47	.Q	.	.	.	V	.
18.733	1.0228	0.47	.Q	.	.	.	V	.
18.750	1.0234	0.47	.Q	.	.	.	V	.
18.767	1.0241	0.47	.Q	.	.	.	V	.
18.783	1.0247	0.46	.Q	.	.	.	V	.
18.800	1.0253	0.46	.Q	.	.	.	V	.
18.817	1.0260	0.46	.Q	.	.	.	V	.
18.833	1.0266	0.46	.Q	.	.	.	V	.
18.850	1.0272	0.46	.Q	.	.	.	V	.
18.867	1.0279	0.46	.Q	.	.	.	V	.
18.883	1.0285	0.45	.Q	.	.	.	V	.
18.900	1.0291	0.45	.Q	.	.	.	V	.
18.917	1.0297	0.45	.Q	.	.	.	V	.
18.933	1.0304	0.45	.Q	.	.	.	V	.
18.950	1.0310	0.45	.Q	.	.	.	V	.
18.967	1.0316	0.45	.Q	.	.	.	V	.
18.983	1.0322	0.45	.Q	.	.	.	V	.
19.000	1.0328	0.44	.Q	.	.	.	V	.
19.017	1.0334	0.44	.Q	.	.	.	V	.
19.033	1.0340	0.44	.Q	.	.	.	V	.
19.050	1.0346	0.44	.Q	.	.	.	V	.
19.067	1.0352	0.44	.Q	.	.	.	V	.
19.083	1.0358	0.44	.Q	.	.	.	V	.
19.100	1.0364	0.44	.Q	.	.	.	V	.
19.117	1.0370	0.43	.Q	.	.	.	V	.
19.133	1.0376	0.43	.Q	.	.	.	V	.
19.150	1.0382	0.43	.Q	.	.	.	V	.
19.167	1.0388	0.43	.Q	.	.	.	V	.
19.183	1.0394	0.43	.Q	.	.	.	V	.
19.200	1.0400	0.43	.Q	.	.	.	V	.
19.217	1.0406	0.43	.Q	.	.	.	V	.
19.233	1.0412	0.43	.Q	.	.	.	V	.
19.250	1.0418	0.42	.Q	.	.	.	V	.
19.267	1.0424	0.42	.Q	.	.	.	V	.
19.283	1.0429	0.42	.Q	.	.	.	V	.
19.300	1.0435	0.42	.Q	.	.	.	V	.
19.317	1.0441	0.42	.Q	.	.	.	V	.
19.333	1.0447	0.42	.Q	.	.	.	V	.

19.350	1.0452	0.42	.Q	.	.	.	V	.
19.367	1.0458	0.42	.Q	.	.	.	V	.
19.383	1.0464	0.41	.Q	.	.	.	V	.
19.400	1.0470	0.41	.Q	.	.	.	V	.
19.417	1.0475	0.41	.Q	.	.	.	V	.
19.433	1.0481	0.41	.Q	.	.	.	V	.
19.450	1.0487	0.41	.Q	.	.	.	V	.
19.467	1.0492	0.41	.Q	.	.	.	V	.
19.483	1.0498	0.41	.Q	.	.	.	V	.
19.500	1.0503	0.41	.Q	.	.	.	V	.
19.517	1.0509	0.41	.Q	.	.	.	V	.
19.533	1.0514	0.40	.Q	.	.	.	V	.
19.550	1.0520	0.40	.Q	.	.	.	V	.
19.567	1.0526	0.40	.Q	.	.	.	V	.
19.583	1.0531	0.40	.Q	.	.	.	V	.
19.600	1.0537	0.40	.Q	.	.	.	V	.
19.617	1.0542	0.40	.Q	.	.	.	V	.
19.633	1.0548	0.40	.Q	.	.	.	V	.
19.650	1.0553	0.40	.Q	.	.	.	V	.
19.667	1.0558	0.40	.Q	.	.	.	V	.
19.683	1.0564	0.39	.Q	.	.	.	V	.
19.700	1.0569	0.39	.Q	.	.	.	V	.
19.717	1.0575	0.39	.Q	.	.	.	V	.
19.733	1.0580	0.39	.Q	.	.	.	V	.
19.750	1.0585	0.39	.Q	.	.	.	V	.
19.767	1.0591	0.39	.Q	.	.	.	V	.
19.783	1.0596	0.39	.Q	.	.	.	V	.
19.800	1.0602	0.39	.Q	.	.	.	V	.
19.817	1.0607	0.39	.Q	.	.	.	V	.
19.833	1.0612	0.39	.Q	.	.	.	V	.
19.850	1.0617	0.38	.Q	.	.	.	V	.
19.867	1.0623	0.38	.Q	.	.	.	V	.
19.883	1.0628	0.38	.Q	.	.	.	V	.
19.900	1.0633	0.38	.Q	.	.	.	V	.
19.917	1.0638	0.38	.Q	.	.	.	V	.
19.933	1.0644	0.38	.Q	.	.	.	V	.
19.950	1.0649	0.38	.Q	.	.	.	V	.
19.967	1.0654	0.38	.Q	.	.	.	V	.
19.983	1.0659	0.38	.Q	.	.	.	V	.
20.000	1.0664	0.38	.Q	.	.	.	V	.
20.017	1.0670	0.37	.Q	.	.	.	V	.
20.033	1.0675	0.37	.Q	.	.	.	V	.
20.050	1.0680	0.37	.Q	.	.	.	V	.
20.067	1.0685	0.37	.Q	.	.	.	V	.
20.083	1.0690	0.37	.Q	.	.	.	V	.
20.100	1.0695	0.37	.Q	.	.	.	V	.
20.117	1.0700	0.37	.Q	.	.	.	V	.
20.133	1.0705	0.37	.Q	.	.	.	V	.
20.150	1.0711	0.37	.Q	.	.	.	V	.
20.167	1.0716	0.37	.Q	.	.	.	V	.
20.183	1.0721	0.37	.Q	.	.	.	V	.
20.200	1.0726	0.37	.Q	.	.	.	V	.
20.217	1.0731	0.36	.Q	.	.	.	V	.
20.233	1.0736	0.36	.Q	.	.	.	V	.
20.250	1.0741	0.36	.Q	.	.	.	V	.
20.267	1.0746	0.36	.Q	.	.	.	V	.
20.283	1.0751	0.36	.Q	.	.	.	V	.
20.300	1.0756	0.36	.Q	.	.	.	V	.
20.317	1.0761	0.36	.Q	.	.	.	V	.
20.333	1.0766	0.36	.Q	.	.	.	V	.
20.350	1.0770	0.36	.Q	.	.	.	V	.
20.367	1.0775	0.36	.Q	.	.	.	V	.
20.383	1.0780	0.36	.Q	.	.	.	V	.
20.400	1.0785	0.36	.Q	.	.	.	V	.
20.417	1.0790	0.35	.Q	.	.	.	V	.

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20.433      1.0795      0.35  .Q        .         .         .     V   .
20.450      1.0800      0.35  .Q        .         .         .     V   .
20.467      1.0805      0.35  .Q        .         .         .      V  .
20.483      1.0810      0.35  .Q        .         .         .      V  .
20.500      1.0814      0.35  .Q        .         .         .      V  .
20.517      1.0819      0.35  .Q        .         .         .      V  .
20.533      1.0824      0.35  .Q        .         .         .      V  .
20.550      1.0829      0.35  .Q        .         .         .      V  .
20.567      1.0834      0.35  .Q        .         .         .      V  .
20.583      1.0838      0.35  .Q        .         .         .      V  .
20.600      1.0843      0.35  .Q        .         .         .      V  .
20.617      1.0848      0.35  .Q        .         .         .      V  .
20.633      1.0853      0.35  .Q        .         .         .      V  .
20.650      1.0857      0.34  .Q        .         .         .      V  .
20.667      1.0862      0.34  .Q        .         .         .      V  .
20.683      1.0867      0.34  .Q        .         .         .      V  .
20.700      1.0872      0.34  .Q        .         .         .      V  .
20.717      1.0876      0.34  .Q        .         .         .      V  .
20.733      1.0881      0.34  .Q        .         .         .      V  .
20.750      1.0886      0.34  .Q        .         .         .      V  .
20.767      1.0890      0.34  .Q        .         .         .      V  .
20.783      1.0895      0.34  .Q        .         .         .      V  .
20.800      1.0900      0.34  .Q        .         .         .      V  .
20.817      1.0904      0.34  .Q        .         .         .      V  .
20.833      1.0909      0.34  .Q        .         .         .      V  .
20.850      1.0914      0.34  .Q        .         .         .      V  .
20.867      1.0918      0.34  .Q        .         .         .      V  .
20.883      1.0923      0.33  .Q        .         .         .      V  .
20.900      1.0927      0.33  .Q        .         .         .      V  .
20.917      1.0932      0.33  .Q        .         .         .      V  .
20.933      1.0937      0.33  .Q        .         .         .      V  .
20.950      1.0941      0.33  .Q        .         .         .      V  .
20.967      1.0946      0.33  .Q        .         .         .      V  .
20.983      1.0950      0.33  .Q        .         .         .      V  .
21.000      1.0955      0.33  .Q        .         .         .      V  .
21.017      1.0959      0.33  .Q        .         .         .      V  .
21.033      1.0964      0.33  .Q        .         .         .      V  .
21.050      1.0968      0.33  .Q        .         .         .      V  .
21.067      1.0973      0.33  .Q        .         .         .      V  .
21.083      1.0977      0.33  .Q        .         .         .      V  .
21.100      1.0982      0.33  .Q        .         .         .      V  .
21.117      1.0986      0.33  .Q        .         .         .      V  .
21.133      1.0991      0.33  .Q        .         .         .      V  .
21.150      1.0995      0.32  .Q        .         .         .      V  .
21.167      1.1000      0.32  .Q        .         .         .      V  .
21.183      1.1004      0.32  .Q        .         .         .      V  .
21.200      1.1009      0.32  .Q        .         .         .      V  .
21.217      1.1013      0.32  .Q        .         .         .      V  .
21.233      1.1018      0.32  .Q        .         .         .      V  .
21.250      1.1022      0.32  .Q        .         .         .      V  .
21.267      1.1027      0.32  .Q        .         .         .      V  .
21.283      1.1031      0.32  .Q        .         .         .      V  .
21.300      1.1035      0.32  .Q        .         .         .      V  .
21.317      1.1040      0.32  .Q        .         .         .      V  .
21.333      1.1044      0.32  .Q        .         .         .      V  .
21.350      1.1048      0.32  .Q        .         .         .      V  .
21.367      1.1053      0.32  .Q        .         .         .      V  .
21.383      1.1057      0.32  .Q        .         .         .      V  .
21.400      1.1062      0.32  .Q        .         .         .      V  .
21.417      1.1066      0.32  .Q        .         .         .      V  .
21.433      1.1070      0.31  .Q        .         .         .      V  .
21.450      1.1075      0.31  .Q        .         .         .      V  .
21.467      1.1079      0.31  .Q        .         .         .      V  .
21.483      1.1083      0.31  .Q        .         .         .      V  .
21.500      1.1087      0.31  .Q        .         .         .      V  .
```

21.517	1.1092	0.31	.Q	.	.	.	V .
21.533	1.1096	0.31	.Q	.	.	.	V .
21.550	1.1100	0.31	.Q	.	.	.	V .
21.567	1.1105	0.31	.Q	.	.	.	V .
21.583	1.1109	0.31	.Q	.	.	.	V .
21.600	1.1113	0.31	.Q	.	.	.	V .
21.617	1.1117	0.31	.Q	.	.	.	V .
21.633	1.1122	0.31	.Q	.	.	.	V .
21.650	1.1126	0.31	.Q	.	.	.	V .
21.667	1.1130	0.31	.Q	.	.	.	V .
21.683	1.1134	0.31	.Q	.	.	.	V .
21.700	1.1139	0.31	.Q	.	.	.	V .
21.717	1.1143	0.31	.Q	.	.	.	V .
21.733	1.1147	0.31	.Q	.	.	.	V .
21.750	1.1151	0.30	.Q	.	.	.	V .
21.767	1.1155	0.30	.Q	.	.	.	V .
21.783	1.1160	0.30	.Q	.	.	.	V .
21.800	1.1164	0.30	.Q	.	.	.	V .
21.817	1.1168	0.30	.Q	.	.	.	V .
21.833	1.1172	0.30	.Q	.	.	.	V .
21.850	1.1176	0.30	.Q	.	.	.	V .
21.867	1.1180	0.30	.Q	.	.	.	V .
21.883	1.1185	0.30	.Q	.	.	.	V .
21.900	1.1189	0.30	.Q	.	.	.	V .
21.917	1.1193	0.30	.Q	.	.	.	V .
21.933	1.1197	0.30	.Q	.	.	.	V .
21.950	1.1201	0.30	.Q	.	.	.	V .
21.967	1.1205	0.30	.Q	.	.	.	V .
21.983	1.1209	0.30	.Q	.	.	.	V .
22.000	1.1213	0.30	.Q	.	.	.	V .
22.017	1.1217	0.30	.Q	.	.	.	V .
22.033	1.1222	0.30	.Q	.	.	.	V .
22.050	1.1226	0.30	.Q	.	.	.	V .
22.067	1.1230	0.30	.Q	.	.	.	V .
22.083	1.1234	0.30	.Q	.	.	.	V .
22.100	1.1238	0.29	.Q	.	.	.	V .
22.117	1.1242	0.29	.Q	.	.	.	V .
22.133	1.1246	0.29	.Q	.	.	.	V .
22.150	1.1250	0.29	.Q	.	.	.	V .
22.167	1.1254	0.29	.Q	.	.	.	V .
22.183	1.1258	0.29	.Q	.	.	.	V .
22.200	1.1262	0.29	.Q	.	.	.	V .
22.217	1.1266	0.29	.Q	.	.	.	V .
22.233	1.1270	0.29	.Q	.	.	.	V .
22.250	1.1274	0.29	.Q	.	.	.	V .
22.267	1.1278	0.29	.Q	.	.	.	V .
22.283	1.1282	0.29	.Q	.	.	.	V .
22.300	1.1286	0.29	.Q	.	.	.	V .
22.317	1.1290	0.29	.Q	.	.	.	V .
22.333	1.1294	0.29	.Q	.	.	.	V .
22.350	1.1298	0.29	.Q	.	.	.	V .
22.367	1.1302	0.29	.Q	.	.	.	V .
22.383	1.1306	0.29	.Q	.	.	.	V .
22.400	1.1310	0.29	.Q	.	.	.	V .
22.417	1.1314	0.29	.Q	.	.	.	V .
22.433	1.1318	0.29	.Q	.	.	.	V .
22.450	1.1322	0.29	.Q	.	.	.	V .
22.467	1.1325	0.28	.Q	.	.	.	V .
22.483	1.1329	0.28	.Q	.	.	.	V .
22.500	1.1333	0.28	.Q	.	.	.	V .
22.517	1.1337	0.28	.Q	.	.	.	V .
22.533	1.1341	0.28	.Q	.	.	.	V .
22.550	1.1345	0.28	.Q	.	.	.	V .
22.567	1.1349	0.28	.Q	.	.	.	V .
22.583	1.1353	0.28	.Q	.	.	.	V .

22.600	1.1357	0.28	.Q	.	.	.	V .
22.617	1.1361	0.28	.Q	.	.	.	V .
22.633	1.1364	0.28	.Q	.	.	.	V .
22.650	1.1368	0.28	.Q	.	.	.	V .
22.667	1.1372	0.28	.Q	.	.	.	V .
22.683	1.1376	0.28	.Q	.	.	.	V .
22.700	1.1380	0.28	Q	.	.	.	V .
22.717	1.1384	0.28	Q	.	.	.	V .
22.733	1.1387	0.28	Q	.	.	.	V.
22.750	1.1391	0.28	Q	.	.	.	V.
22.767	1.1395	0.28	Q	.	.	.	V.
22.783	1.1399	0.28	Q	.	.	.	V.
22.800	1.1403	0.28	Q	.	.	.	V.
22.817	1.1407	0.28	Q	.	.	.	V.
22.833	1.1410	0.28	Q	.	.	.	V.
22.850	1.1414	0.28	Q	.	.	.	V.
22.867	1.1418	0.28	Q	.	.	.	V.
22.883	1.1422	0.27	Q	.	.	.	V.
22.900	1.1425	0.27	Q	.	.	.	V.
22.917	1.1429	0.27	Q	.	.	.	V.
22.933	1.1433	0.27	Q	.	.	.	V.
22.950	1.1437	0.27	Q	.	.	.	V.
22.967	1.1441	0.27	Q	.	.	.	V.
22.983	1.1444	0.27	Q	.	.	.	V.
23.000	1.1448	0.27	Q	.	.	.	V.
23.017	1.1452	0.27	Q	.	.	.	V.
23.033	1.1456	0.27	Q	.	.	.	V.
23.050	1.1459	0.27	Q	.	.	.	V.
23.067	1.1463	0.27	Q	.	.	.	V.
23.083	1.1467	0.27	Q	.	.	.	V.
23.100	1.1470	0.27	Q	.	.	.	V.
23.117	1.1474	0.27	Q	.	.	.	V.
23.133	1.1478	0.27	Q	.	.	.	V.
23.150	1.1482	0.27	Q	.	.	.	V.
23.167	1.1485	0.27	Q	.	.	.	V.
23.183	1.1489	0.27	Q	.	.	.	V.
23.200	1.1493	0.27	Q	.	.	.	V.
23.217	1.1496	0.27	Q	.	.	.	V.
23.233	1.1500	0.27	Q	.	.	.	V.
23.250	1.1504	0.27	Q	.	.	.	V.
23.267	1.1507	0.27	Q	.	.	.	V.
23.283	1.1511	0.27	Q	.	.	.	V.
23.300	1.1515	0.27	Q	.	.	.	V.
23.317	1.1518	0.27	Q	.	.	.	V.
23.333	1.1522	0.26	Q	.	.	.	V.
23.350	1.1526	0.26	Q	.	.	.	V.
23.367	1.1529	0.26	Q	.	.	.	V.
23.383	1.1533	0.26	Q	.	.	.	V.
23.400	1.1537	0.26	Q	.	.	.	V.
23.417	1.1540	0.26	Q	.	.	.	V.
23.433	1.1544	0.26	Q	.	.	.	V.
23.450	1.1547	0.26	Q	.	.	.	V.
23.467	1.1551	0.26	Q	.	.	.	V.
23.483	1.1555	0.26	Q	.	.	.	V.
23.500	1.1558	0.26	Q	.	.	.	V.
23.517	1.1562	0.26	Q	.	.	.	V.
23.533	1.1565	0.26	Q	.	.	.	V.
23.550	1.1569	0.26	Q	.	.	.	V.
23.567	1.1573	0.26	Q	.	.	.	V.
23.583	1.1576	0.26	Q	.	.	.	V.
23.600	1.1580	0.26	Q	.	.	.	V.
23.617	1.1583	0.26	Q	.	.	.	V.
23.633	1.1587	0.26	Q	.	.	.	V.
23.650	1.1590	0.26	Q	.	.	.	V.
23.667	1.1594	0.26	Q	.	.	.	V.

```
  23.683      1.1598      0.26  Q          .          .          .         V.
  23.700      1.1601      0.26  Q          .          .          .         V.
  23.717      1.1605      0.26  Q          .          .          .         V.
  23.733      1.1608      0.26  Q          .          .          .         V.
  23.750      1.1612      0.26  Q          .          .          .         V.
  23.767      1.1615      0.26  Q          .          .          .         V.
  23.783      1.1619      0.26  Q          .          .          .         V.
  23.800      1.1622      0.26  Q          .          .          .         V.
  23.817      1.1626      0.26  Q          .          .          .         V.
  23.833      1.1629      0.26  Q          .          .          .         V.
  23.850      1.1633      0.25  Q          .          .          .         V.
  23.867      1.1636      0.25  Q          .          .          .         V.
  23.883      1.1640      0.25  Q          .          .          .         V.
  23.900      1.1643      0.25  Q          .          .          .         V.
  23.917      1.1647      0.25  Q          .          .          .         V.
  23.933      1.1650      0.25  Q          .          .          .         V.
  23.950      1.1654      0.25  Q          .          .          .         V.
  23.967      1.1657      0.25  Q          .          .          .         V.
  23.983      1.1661      0.25  Q          .          .          .         V.
  24.000      1.1664      0.25  Q          .          .          .         V.
  24.017      1.1668      0.25  Q          .          .          .         V.
  24.033      1.1671      0.23  Q          .          .          .         V.
  24.050      1.1674      0.19  Q          .          .          .         V.
  24.067      1.1676      0.16  Q          .          .          .         V.
  24.083      1.1677      0.12  Q          .          .          .         V.
  24.100      1.1678      0.08  Q          .          .          .         V.
  24.117      1.1679      0.05  Q          .          .          .          V

****************************************************************************
  FLOW PROCESS FROM NODE   1123.00 TO NODE   1123.00 IS CODE =   6
----------------------------------------------------------------------------
  >>>>>STREAM NUMBER 1 CLEARED AND SET TO ZERO<<<<<
============================================================================
============================================================================

  END OF FLOODSCx ROUTING ANALYSIS
```

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_____________________________________________________________________________
*****************************************************************************
           NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                     AND LOW LOSS FRACTION ESTIMATIONS
=============================================================================
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                            Analysis prepared by:

                            DRC Engineering, Inc.
                   160 South Old Springs Road, Suite 210
                      Anaheim Hills, California 92808
                   Tel: 714-685-6860 * Fax: 714-685-6801

*****************************************************************************
-----------------------------------------------------------------------------

 Problem Descriptions:
  RESIDENCE AT CASA LOMA - REDLANDS
  PROPOSED CONDITION
  HYDROLOGIC ANALYSIS - 100-YEAR
=============================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     4.93 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1          5.25       20.00        52.( 32.)     0.796       0.793

    TOTAL AREA (Acres) =      5.25

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.159

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.207
=============================================================================
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              F L O O D    R O U T I N G    A N A L Y S I S
          USING COUNTY HYDROLOGY MANUAL OF SAN BERNARDINO(1986)
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             Ver. 8.0  Release Date: 01/01/2003  License ID 1510

                           Analysis prepared by:

                           DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                       Anaheim Hills, California 92808
                    Tel: 714-685-6860 * Fax: 714-685-6801

 *************************** DESCRIPTION OF STUDY **************************
* RESIDENCE AS CASA LOMA - REDLANDS                                        *
* PROPOSED CONDITION                                                       *
* HYDROLOGIC ANALYSIS - 100-YEAR                                           *
 ***************************************************************************

  FILE NAME: 1803P100.FLD
  TIME/DATE OF STUDY: 18:00 03/14/2018

   The Small Area Unit Hydrograph Procedures in Section J
   of the Hydrology Manual provides estimates of runoff
   hydrograph and runoff volume for watersheds whose time of
   concentration is less than 25 minutes. The PROGRAM User
   should check the applicability of using the small area unit
   hydrograph procedures, and follow the guidelines in
   Sections J and K.5 in complex watershed modeling.


****************************************************************************
  FLOW PROCESS FROM NODE   1000.00 TO NODE   1123.00 IS CODE = 1.2
----------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<
============================================================================

  (SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

    RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
    TOTAL CATCHMENT AREA(ACRES) =    5.25
    SOIL-LOSS RATE, Fm,(INCH/HR) =  0.159
    LOW LOSS FRACTION = 0.207
    TIME OF CONCENTRATION(MIN.) =  6.75
    SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
    USER SPECIFIED RAINFALL VALUES ARE USED:
    RETURN FREQUENCY(YEARS) = 100
       5-MINUTE POINT RAINFALL VALUE(INCHES) =  0.32
      30-MINUTE POINT RAINFALL VALUE(INCHES) =  0.83
       1-HOUR   POINT RAINFALL VALUE(INCHES) =  1.19
       3-HOUR   POINT RAINFALL VALUE(INCHES) =  1.98
       6-HOUR   POINT RAINFALL VALUE(INCHES) =  2.72
      24-HOUR   POINT RAINFALL VALUE(INCHES) =  4.93

----------------------------------------------------------------------------
    TOTAL CATCHMENT   RUNOFF  VOLUME(ACRE-FEET) =     1.57
    TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) =     0.59

----------------------------------------------------------------------------

============================================================================

                      2 4 - H O U R    S T O R M
```

R U N O F F H Y D R O G R A P H

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	3.8	7.5	11.3	15.1
0.017	0.0000	0.00	Q	.	.	.	.
0.033	0.0000	0.01	Q	.	.	.	.
0.050	0.0001	0.05	Q	.	.	.	.
0.067	0.0002	0.10	Q	.	.	.	.
0.083	0.0004	0.15	Q	.	.	.	.
0.100	0.0007	0.20	Q	.	.	.	.
0.117	0.0010	0.25	Q	.	.	.	.
0.133	0.0014	0.29	Q	.	.	.	.
0.150	0.0019	0.33	Q	.	.	.	.
0.167	0.0023	0.33	Q	.	.	.	.
0.183	0.0028	0.33	Q	.	.	.	.
0.200	0.0032	0.33	Q	.	.	.	.
0.217	0.0037	0.33	Q	.	.	.	.
0.233	0.0042	0.33	Q	.	.	.	.
0.250	0.0046	0.33	Q	.	.	.	.
0.267	0.0051	0.33	Q	.	.	.	.
0.283	0.0055	0.33	Q	.	.	.	.
0.300	0.0060	0.33	Q	.	.	.	.
0.317	0.0065	0.33	Q	.	.	.	.
0.333	0.0069	0.33	Q	.	.	.	.
0.350	0.0074	0.33	Q	.	.	.	.
0.367	0.0078	0.33	Q	.	.	.	.
0.383	0.0083	0.33	Q	.	.	.	.
0.400	0.0087	0.33	Q	.	.	.	.
0.417	0.0092	0.33	Q	.	.	.	.
0.433	0.0097	0.33	Q	.	.	.	.
0.450	0.0101	0.33	Q	.	.	.	.
0.467	0.0106	0.33	Q	.	.	.	.
0.483	0.0110	0.33	Q	.	.	.	.
0.500	0.0115	0.33	Q	.	.	.	.
0.517	0.0120	0.34	Q	.	.	.	.
0.533	0.0124	0.34	Q	.	.	.	.
0.550	0.0129	0.34	Q	.	.	.	.
0.567	0.0134	0.34	Q	.	.	.	.
0.583	0.0138	0.34	Q	.	.	.	.
0.600	0.0143	0.34	Q	.	.	.	.
0.617	0.0147	0.34	Q	.	.	.	.
0.633	0.0152	0.34	Q	.	.	.	.
0.650	0.0157	0.34	Q	.	.	.	.
0.667	0.0161	0.34	Q	.	.	.	.
0.683	0.0166	0.34	Q	.	.	.	.
0.700	0.0171	0.34	Q	.	.	.	.
0.717	0.0175	0.34	Q	.	.	.	.
0.733	0.0180	0.34	Q	.	.	.	.
0.750	0.0185	0.34	Q	.	.	.	.
0.767	0.0189	0.34	Q	.	.	.	.
0.783	0.0194	0.34	Q	.	.	.	.
0.800	0.0199	0.34	Q	.	.	.	.
0.817	0.0203	0.34	Q	.	.	.	.
0.833	0.0208	0.34	Q	.	.	.	.
0.850	0.0213	0.34	Q	.	.	.	.
0.867	0.0217	0.34	Q	.	.	.	.
0.883	0.0222	0.34	Q	.	.	.	.
0.900	0.0227	0.34	Q	.	.	.	.
0.917	0.0231	0.34	Q	.	.	.	.

0.933	0.0236	0.34	Q	.	.	.	.
0.950	0.0241	0.34	Q	.	.	.	.
0.967	0.0245	0.34	Q	.	.	.	.
0.983	0.0250	0.34	Q	.	.	.	.
1.000	0.0255	0.34	Q	.	.	.	.
1.017	0.0260	0.34	Q	.	.	.	.
1.033	0.0264	0.34	Q	.	.	.	.
1.050	0.0269	0.34	Q	.	.	.	.
1.067	0.0274	0.34	Q	.	.	.	.
1.083	0.0278	0.34	Q	.	.	.	.
1.100	0.0283	0.34	Q	.	.	.	.
1.117	0.0288	0.34	Q	.	.	.	.
1.133	0.0293	0.34	Q	.	.	.	.
1.150	0.0297	0.34	Q	.	.	.	.
1.167	0.0302	0.34	Q	.	.	.	.
1.183	0.0307	0.34	Q	.	.	.	.
1.200	0.0311	0.34	Q	.	.	.	.
1.217	0.0316	0.34	Q	.	.	.	.
1.233	0.0321	0.34	Q	.	.	.	.
1.250	0.0326	0.34	Q	.	.	.	.
1.267	0.0330	0.34	Q	.	.	.	.
1.283	0.0335	0.35	Q	.	.	.	.
1.300	0.0340	0.35	Q	.	.	.	.
1.317	0.0345	0.35	Q	.	.	.	.
1.333	0.0350	0.35	Q	.	.	.	.
1.350	0.0354	0.35	Q	.	.	.	.
1.367	0.0359	0.35	Q	.	.	.	.
1.383	0.0364	0.35	Q	.	.	.	.
1.400	0.0369	0.35	Q	.	.	.	.
1.417	0.0373	0.35	Q	.	.	.	.
1.433	0.0378	0.35	Q	.	.	.	.
1.450	0.0383	0.35	Q	.	.	.	.
1.467	0.0388	0.35	Q	.	.	.	.
1.483	0.0392	0.35	QV	.	.	.	.
1.500	0.0397	0.35	QV	.	.	.	.
1.517	0.0402	0.35	QV	.	.	.	.
1.533	0.0407	0.35	QV	.	.	.	.
1.550	0.0412	0.35	QV	.	.	.	.
1.567	0.0416	0.35	QV	.	.	.	.
1.583	0.0421	0.35	QV	.	.	.	.
1.600	0.0426	0.35	QV	.	.	.	.
1.617	0.0431	0.35	QV	.	.	.	.
1.633	0.0436	0.35	QV	.	.	.	.
1.650	0.0441	0.35	QV	.	.	.	.
1.667	0.0445	0.35	QV	.	.	.	.
1.683	0.0450	0.35	QV	.	.	.	.
1.700	0.0455	0.35	QV	.	.	.	.
1.717	0.0460	0.35	QV	.	.	.	.
1.733	0.0465	0.35	QV	.	.	.	.
1.750	0.0470	0.35	QV	.	.	.	.
1.767	0.0474	0.35	QV	.	.	.	.
1.783	0.0479	0.35	QV	.	.	.	.
1.800	0.0484	0.35	QV	.	.	.	.
1.817	0.0489	0.35	QV	.	.	.	.
1.833	0.0494	0.35	QV	.	.	.	.
1.850	0.0499	0.35	QV	.	.	.	.
1.867	0.0503	0.35	QV	.	.	.	.
1.883	0.0508	0.35	QV	.	.	.	.
1.900	0.0513	0.35	QV	.	.	.	.
1.917	0.0518	0.35	QV	.	.	.	.
1.933	0.0523	0.35	QV	.	.	.	.
1.950	0.0528	0.35	QV	.	.	.	.
1.967	0.0533	0.35	QV	.	.	.	.
1.983	0.0538	0.35	QV	.	.	.	.
2.000	0.0543	0.35	QV	.	.	.	.

2.017	0.0547	0.36	QV	.	.	.	.
2.033	0.0552	0.36	QV	.	.	.	.
2.050	0.0557	0.36	QV	.	.	.	.
2.067	0.0562	0.36	QV	.	.	.	.
2.083	0.0567	0.36	QV	.	.	.	.
2.100	0.0572	0.36	QV	.	.	.	.
2.117	0.0577	0.36	QV	.	.	.	.
2.133	0.0582	0.36	QV	.	.	.	.
2.150	0.0587	0.36	QV	.	.	.	.
2.167	0.0592	0.36	QV	.	.	.	.
2.183	0.0596	0.36	QV	.	.	.	.
2.200	0.0601	0.36	QV	.	.	.	.
2.217	0.0606	0.36	QV	.	.	.	.
2.233	0.0611	0.36	QV	.	.	.	.
2.250	0.0616	0.36	QV	.	.	.	.
2.267	0.0621	0.36	QV	.	.	.	.
2.283	0.0626	0.36	QV	.	.	.	.
2.300	0.0631	0.36	QV	.	.	.	.
2.317	0.0636	0.36	QV	.	.	.	.
2.333	0.0641	0.36	QV	.	.	.	.
2.350	0.0646	0.36	QV	.	.	.	.
2.367	0.0651	0.36	QV	.	.	.	.
2.383	0.0656	0.36	QV	.	.	.	.
2.400	0.0661	0.36	QV	.	.	.	.
2.417	0.0666	0.36	QV	.	.	.	.
2.433	0.0671	0.36	QV	.	.	.	.
2.450	0.0676	0.36	QV	.	.	.	.
2.467	0.0681	0.36	QV	.	.	.	.
2.483	0.0686	0.36	QV	.	.	.	.
2.500	0.0691	0.36	QV	.	.	.	.
2.517	0.0696	0.36	QV	.	.	.	.
2.533	0.0701	0.36	QV	.	.	.	.
2.550	0.0706	0.36	QV	.	.	.	.
2.567	0.0711	0.36	QV	.	.	.	.
2.583	0.0716	0.36	QV	.	.	.	.
2.600	0.0721	0.36	QV	.	.	.	.
2.617	0.0726	0.36	QV	.	.	.	.
2.633	0.0731	0.36	QV	.	.	.	.
2.650	0.0736	0.36	QV	.	.	.	.
2.667	0.0741	0.36	QV	.	.	.	.
2.683	0.0746	0.37	QV	.	.	.	.
2.700	0.0751	0.37	QV	.	.	.	.
2.717	0.0756	0.37	QV	.	.	.	.
2.733	0.0761	0.37	QV	.	.	.	.
2.750	0.0766	0.37	QV	.	.	.	.
2.767	0.0771	0.37	QV	.	.	.	.
2.783	0.0776	0.37	QV	.	.	.	.
2.800	0.0781	0.37	QV	.	.	.	.
2.817	0.0786	0.37	Q V	.	.	.	.
2.833	0.0791	0.37	Q V	.	.	.	.
2.850	0.0796	0.37	Q V	.	.	.	.
2.867	0.0801	0.37	Q V	.	.	.	.
2.883	0.0806	0.37	Q V	.	.	.	.
2.900	0.0812	0.37	Q V	.	.	.	.
2.917	0.0817	0.37	Q V	.	.	.	.
2.933	0.0822	0.37	Q V	.	.	.	.
2.950	0.0827	0.37	Q V	.	.	.	.
2.967	0.0832	0.37	Q V	.	.	.	.
2.983	0.0837	0.37	Q V	.	.	.	.
3.000	0.0842	0.37	Q V	.	.	.	.
3.017	0.0847	0.37	Q V	.	.	.	.
3.033	0.0852	0.37	Q V	.	.	.	.
3.050	0.0857	0.37	Q V	.	.	.	.
3.067	0.0862	0.37	Q V	.	.	.	.
3.083	0.0868	0.37	Q V	.	.	.	.

3.100	0.0873	0.37	Q V	.	.	.	.
3.117	0.0878	0.37	Q V	.	.	.	.
3.133	0.0883	0.37	Q V	.	.	.	.
3.150	0.0888	0.37	Q V	.	.	.	.
3.167	0.0893	0.37	Q V	.	.	.	.
3.183	0.0898	0.37	Q V	.	.	.	.
3.200	0.0904	0.37	Q V	.	.	.	.
3.217	0.0909	0.37	Q V	.	.	.	.
3.233	0.0914	0.37	Q V	.	.	.	.
3.250	0.0919	0.37	Q V	.	.	.	.
3.267	0.0924	0.37	Q V	.	.	.	.
3.283	0.0929	0.37	Q V	.	.	.	.
3.300	0.0934	0.38	Q V	.	.	.	.
3.317	0.0940	0.38	Q V	.	.	.	.
3.333	0.0945	0.38	Q V	.	.	.	.
3.350	0.0950	0.38	Q V	.	.	.	.
3.367	0.0955	0.38	Q V	.	.	.	.
3.383	0.0960	0.38	Q V	.	.	.	.
3.400	0.0966	0.38	Q V	.	.	.	.
3.417	0.0971	0.38	Q V	.	.	.	.
3.433	0.0976	0.38	Q V	.	.	.	.
3.450	0.0981	0.38	.QV	.	.	.	.
3.467	0.0986	0.38	.QV	.	.	.	.
3.483	0.0992	0.38	.QV	.	.	.	.
3.500	0.0997	0.38	.QV	.	.	.	.
3.517	0.1002	0.38	.QV	.	.	.	.
3.533	0.1007	0.38	.QV	.	.	.	.
3.550	0.1012	0.38	.QV	.	.	.	.
3.567	0.1018	0.38	.QV	.	.	.	.
3.583	0.1023	0.38	.QV	.	.	.	.
3.600	0.1028	0.38	.QV	.	.	.	.
3.617	0.1033	0.38	.QV	.	.	.	.
3.633	0.1039	0.38	.QV	.	.	.	.
3.650	0.1044	0.38	.QV	.	.	.	.
3.667	0.1049	0.38	.QV	.	.	.	.
3.683	0.1054	0.38	.QV	.	.	.	.
3.700	0.1060	0.38	.QV	.	.	.	.
3.717	0.1065	0.38	.QV	.	.	.	.
3.733	0.1070	0.38	.QV	.	.	.	.
3.750	0.1075	0.38	.QV	.	.	.	.
3.767	0.1081	0.38	.QV	.	.	.	.
3.783	0.1086	0.38	.QV	.	.	.	.
3.800	0.1091	0.38	.QV	.	.	.	.
3.817	0.1097	0.38	.QV	.	.	.	.
3.833	0.1102	0.38	.QV	.	.	.	.
3.850	0.1107	0.38	.QV	.	.	.	.
3.867	0.1112	0.38	.QV	.	.	.	.
3.883	0.1118	0.38	.QV	.	.	.	.
3.900	0.1123	0.39	.QV	.	.	.	.
3.917	0.1128	0.39	.QV	.	.	.	.
3.933	0.1134	0.39	.QV	.	.	.	.
3.950	0.1139	0.39	.QV	.	.	.	.
3.967	0.1144	0.39	.QV	.	.	.	.
3.983	0.1150	0.39	.QV	.	.	.	.
4.000	0.1155	0.39	.QV	.	.	.	.
4.017	0.1160	0.39	.QV	.	.	.	.
4.033	0.1166	0.39	.QV	.	.	.	.
4.050	0.1171	0.39	.QV	.	.	.	.
4.067	0.1176	0.39	.Q V	.	.	.	.
4.083	0.1182	0.39	.Q V	.	.	.	.
4.100	0.1187	0.39	.Q V	.	.	.	.
4.117	0.1192	0.39	.Q V	.	.	.	.
4.133	0.1198	0.39	.Q V	.	.	.	.
4.150	0.1203	0.39	.Q V	.	.	.	.
4.167	0.1209	0.39	.Q V	.	.	.	.

4.183	0.1214	0.39	.Q V	.	.	.	.
4.200	0.1219	0.39	.Q V	.	.	.	.
4.217	0.1225	0.39	.Q V	.	.	.	.
4.233	0.1230	0.39	.Q V	.	.	.	.
4.250	0.1236	0.39	.Q V	.	.	.	.
4.267	0.1241	0.39	.Q V	.	.	.	.
4.283	0.1246	0.39	.Q V	.	.	.	.
4.300	0.1252	0.39	.Q V	.	.	.	.
4.317	0.1257	0.39	.Q V	.	.	.	.
4.333	0.1263	0.39	.Q V	.	.	.	.
4.350	0.1268	0.39	.Q V	.	.	.	.
4.367	0.1273	0.39	.Q V	.	.	.	.
4.383	0.1279	0.39	.Q V	.	.	.	.
4.400	0.1284	0.39	.Q V	.	.	.	.
4.417	0.1290	0.40	.Q V	.	.	.	.
4.433	0.1295	0.40	.Q V	.	.	.	.
4.450	0.1301	0.40	.Q V	.	.	.	.
4.467	0.1306	0.40	.Q V	.	.	.	.
4.483	0.1312	0.40	.Q V	.	.	.	.
4.500	0.1317	0.40	.Q V	.	.	.	.
4.517	0.1322	0.40	.Q V	.	.	.	.
4.533	0.1328	0.40	.Q V	.	.	.	.
4.550	0.1333	0.40	.Q V	.	.	.	.
4.567	0.1339	0.40	.Q V	.	.	.	.
4.583	0.1344	0.40	.Q V	.	.	.	.
4.600	0.1350	0.40	.Q V	.	.	.	.
4.617	0.1355	0.40	.Q V	.	.	.	.
4.633	0.1361	0.40	.Q V	.	.	.	.
4.650	0.1366	0.40	.Q V	.	.	.	.
4.667	0.1372	0.40	.Q V	.	.	.	.
4.683	0.1377	0.40	.Q V	.	.	.	.
4.700	0.1383	0.40	.Q V	.	.	.	.
4.717	0.1388	0.40	.Q V	.	.	.	.
4.733	0.1394	0.40	.Q V	.	.	.	.
4.750	0.1400	0.40	.Q V	.	.	.	.
4.767	0.1405	0.40	.Q V	.	.	.	.
4.783	0.1411	0.40	.Q V	.	.	.	.
4.800	0.1416	0.40	.Q V	.	.	.	.
4.817	0.1422	0.40	.Q V	.	.	.	.
4.833	0.1427	0.40	.Q V	.	.	.	.
4.850	0.1433	0.40	.Q V	.	.	.	.
4.867	0.1438	0.40	.Q V	.	.	.	.
4.883	0.1444	0.40	.Q V	.	.	.	.
4.900	0.1450	0.40	.Q V	.	.	.	.
4.917	0.1455	0.41	.Q V	.	.	.	.
4.933	0.1461	0.41	.Q V	.	.	.	.
4.950	0.1466	0.41	.Q V	.	.	.	.
4.967	0.1472	0.41	.Q V	.	.	.	.
4.983	0.1477	0.41	.Q V	.	.	.	.
5.000	0.1483	0.41	.Q V	.	.	.	.
5.017	0.1489	0.41	.Q V	.	.	.	.
5.033	0.1494	0.41	.Q V	.	.	.	.
5.050	0.1500	0.41	.Q V	.	.	.	.
5.067	0.1506	0.41	.Q V	.	.	.	.
5.083	0.1511	0.41	.Q V	.	.	.	.
5.100	0.1517	0.41	.Q V	.	.	.	.
5.117	0.1522	0.41	.Q V	.	.	.	.
5.133	0.1528	0.41	.Q V	.	.	.	.
5.150	0.1534	0.41	.Q V	.	.	.	.
5.167	0.1539	0.41	.Q V	.	.	.	.
5.183	0.1545	0.41	.Q V	.	.	.	.
5.200	0.1551	0.41	.Q V	.	.	.	.
5.217	0.1556	0.41	.Q V	.	.	.	.
5.233	0.1562	0.41	.Q V	.	.	.	.
5.250	0.1568	0.41	.Q V	.	.	.	.

5.267	0.1573	0.41	.Q	V	.	.	.	.
5.283	0.1579	0.41	.Q	V	.	.	.	.
5.300	0.1585	0.41	.Q	V	.	.	.	.
5.317	0.1590	0.41	.Q	V	.	.	.	.
5.333	0.1596	0.41	.Q	V	.	.	.	.
5.350	0.1602	0.41	.Q	V	.	.	.	.
5.367	0.1608	0.41	.Q	V	.	.	.	.
5.383	0.1613	0.41	.Q	V	.	.	.	.
5.400	0.1619	0.42	.Q	V	.	.	.	.
5.417	0.1625	0.42	.Q	V	.	.	.	.
5.433	0.1630	0.42	.Q	V	.	.	.	.
5.450	0.1636	0.42	.Q	V	.	.	.	.
5.467	0.1642	0.42	.Q	V	.	.	.	.
5.483	0.1648	0.42	.Q	V	.	.	.	.
5.500	0.1653	0.42	.Q	V	.	.	.	.
5.517	0.1659	0.42	.Q	V	.	.	.	.
5.533	0.1665	0.42	.Q	V	.	.	.	.
5.550	0.1671	0.42	.Q	V	.	.	.	.
5.567	0.1677	0.42	.Q	V	.	.	.	.
5.583	0.1682	0.42	.Q	V	.	.	.	.
5.600	0.1688	0.42	.Q	V	.	.	.	.
5.617	0.1694	0.42	.Q	V	.	.	.	.
5.633	0.1700	0.42	.Q	V	.	.	.	.
5.650	0.1705	0.42	.Q	V	.	.	.	.
5.667	0.1711	0.42	.Q	V	.	.	.	.
5.683	0.1717	0.42	.Q	V	.	.	.	.
5.700	0.1723	0.42	.Q	V	.	.	.	.
5.717	0.1729	0.42	.Q	V	.	.	.	.
5.733	0.1735	0.42	.Q	V	.	.	.	.
5.750	0.1740	0.42	.Q	V	.	.	.	.
5.767	0.1746	0.42	.Q	V	.	.	.	.
5.783	0.1752	0.42	.Q	V	.	.	.	.
5.800	0.1758	0.42	.Q	V	.	.	.	.
5.817	0.1764	0.43	.Q	V	.	.	.	.
5.833	0.1770	0.43	.Q	V	.	.	.	.
5.850	0.1775	0.43	.Q	V	.	.	.	.
5.867	0.1781	0.43	.Q	V	.	.	.	.
5.883	0.1787	0.43	.Q	V	.	.	.	.
5.900	0.1793	0.43	.Q	V	.	.	.	.
5.917	0.1799	0.43	.Q	V	.	.	.	.
5.933	0.1805	0.43	.Q	V	.	.	.	.
5.950	0.1811	0.43	.Q	V	.	.	.	.
5.967	0.1817	0.43	.Q	V	.	.	.	.
5.983	0.1823	0.43	.Q	V	.	.	.	.
6.000	0.1829	0.43	.Q	V	.	.	.	.
6.017	0.1834	0.43	.Q	V	.	.	.	.
6.033	0.1840	0.43	.Q	V	.	.	.	.
6.050	0.1846	0.43	.Q	V	.	.	.	.
6.067	0.1852	0.43	.Q	V	.	.	.	.
6.083	0.1858	0.43	.Q	V	.	.	.	.
6.100	0.1864	0.43	.Q	V	.	.	.	.
6.117	0.1870	0.43	.Q	V	.	.	.	.
6.133	0.1876	0.43	.Q	V	.	.	.	.
6.150	0.1882	0.43	.Q	V	.	.	.	.
6.167	0.1888	0.43	.Q	V	.	.	.	.
6.183	0.1894	0.43	.Q	V	.	.	.	.
6.200	0.1900	0.43	.Q	V	.	.	.	.
6.217	0.1906	0.44	.Q	V	.	.	.	.
6.233	0.1912	0.44	.Q	V	.	.	.	.
6.250	0.1918	0.44	.Q	V	.	.	.	.
6.267	0.1924	0.44	.Q	V	.	.	.	.
6.283	0.1930	0.44	.Q	V	.	.	.	.
6.300	0.1936	0.44	.Q	V	.	.	.	.
6.317	0.1942	0.44	.Q	V	.	.	.	.
6.333	0.1948	0.44	.Q	V	.	.	.	.

6.350	0.1954	0.44	.Q	V	.	.	.	.
6.367	0.1960	0.44	.Q	V	.	.	.	.
6.383	0.1966	0.44	.Q	V	.	.	.	.
6.400	0.1972	0.44	.Q	V	.	.	.	.
6.417	0.1978	0.44	.Q	V	.	.	.	.
6.433	0.1984	0.44	.Q	V	.	.	.	.
6.450	0.1990	0.44	.Q	V	.	.	.	.
6.467	0.1996	0.44	.Q	V	.	.	.	.
6.483	0.2003	0.44	.Q	V	.	.	.	.
6.500	0.2009	0.44	.Q	V	.	.	.	.
6.517	0.2015	0.44	.Q	V	.	.	.	.
6.533	0.2021	0.44	.Q	V	.	.	.	.
6.550	0.2027	0.44	.Q	V	.	.	.	.
6.567	0.2033	0.44	.Q	V	.	.	.	.
6.583	0.2039	0.44	.Q	V	.	.	.	.
6.600	0.2045	0.44	.Q	V	.	.	.	.
6.617	0.2051	0.45	.Q	V	.	.	.	.
6.633	0.2057	0.45	.Q	V	.	.	.	.
6.650	0.2064	0.45	.Q	V	.	.	.	.
6.667	0.2070	0.45	.Q	V	.	.	.	.
6.683	0.2076	0.45	.Q	V	.	.	.	.
6.700	0.2082	0.45	.Q	V	.	.	.	.
6.717	0.2088	0.45	.Q	V	.	.	.	.
6.733	0.2094	0.45	.Q	V	.	.	.	.
6.750	0.2101	0.45	.Q	V	.	.	.	.
6.767	0.2107	0.45	.Q	V	.	.	.	.
6.783	0.2113	0.45	.Q	V	.	.	.	.
6.800	0.2119	0.45	.Q	V	.	.	.	.
6.817	0.2125	0.45	.Q	V	.	.	.	.
6.833	0.2132	0.45	.Q	V	.	.	.	.
6.850	0.2138	0.45	.Q	V	.	.	.	.
6.867	0.2144	0.45	.Q	V	.	.	.	.
6.883	0.2150	0.45	.Q	V	.	.	.	.
6.900	0.2157	0.45	.Q	V	.	.	.	.
6.917	0.2163	0.45	.Q	V	.	.	.	.
6.933	0.2169	0.45	.Q	V	.	.	.	.
6.950	0.2175	0.45	.Q	V	.	.	.	.
6.967	0.2182	0.45	.Q	V	.	.	.	.
6.983	0.2188	0.45	.Q	V	.	.	.	.
7.000	0.2194	0.46	.Q	V	.	.	.	.
7.017	0.2200	0.46	.Q	V	.	.	.	.
7.033	0.2207	0.46	.Q	V	.	.	.	.
7.050	0.2213	0.46	.Q	V	.	.	.	.
7.067	0.2219	0.46	.Q	V	.	.	.	.
7.083	0.2226	0.46	.Q	V	.	.	.	.
7.100	0.2232	0.46	.Q	V	.	.	.	.
7.117	0.2238	0.46	.Q	V	.	.	.	.
7.133	0.2245	0.46	.Q	V	.	.	.	.
7.150	0.2251	0.46	.Q	V	.	.	.	.
7.167	0.2257	0.46	.Q	V	.	.	.	.
7.183	0.2264	0.46	.Q	V	.	.	.	.
7.200	0.2270	0.46	.Q	V	.	.	.	.
7.217	0.2276	0.46	.Q	V	.	.	.	.
7.233	0.2283	0.46	.Q	V	.	.	.	.
7.250	0.2289	0.46	.Q	V	.	.	.	.
7.267	0.2295	0.46	.Q	V	.	.	.	.
7.283	0.2302	0.46	.Q	V	.	.	.	.
7.300	0.2308	0.46	.Q	V	.	.	.	.
7.317	0.2315	0.47	.Q	V	.	.	.	.
7.333	0.2321	0.47	.Q	V	.	.	.	.
7.350	0.2327	0.47	.Q	V	.	.	.	.
7.367	0.2334	0.47	.Q	V	.	.	.	.
7.383	0.2340	0.47	.Q	V	.	.	.	.
7.400	0.2347	0.47	.Q	V	.	.	.	.
7.417	0.2353	0.47	.Q	V	.	.	.	.

7.433	0.2360	0.47	.Q	V	.	.	.	.
7.450	0.2366	0.47	.Q	V	.	.	.	.
7.467	0.2373	0.47	.Q	V	.	.	.	.
7.483	0.2379	0.47	.Q	V	.	.	.	.
7.500	0.2386	0.47	.Q	V	.	.	.	.
7.517	0.2392	0.47	.Q	V	.	.	.	.
7.533	0.2399	0.47	.Q	V	.	.	.	.
7.550	0.2405	0.47	.Q	V	.	.	.	.
7.567	0.2412	0.47	.Q	V	.	.	.	.
7.583	0.2418	0.47	.Q	V	.	.	.	.
7.600	0.2425	0.47	.Q	V	.	.	.	.
7.617	0.2431	0.47	.Q	V	.	.	.	.
7.633	0.2438	0.47	.Q	V	.	.	.	.
7.650	0.2444	0.48	.Q	V	.	.	.	.
7.667	0.2451	0.48	.Q	V	.	.	.	.
7.683	0.2457	0.48	.Q	V	.	.	.	.
7.700	0.2464	0.48	.Q	V	.	.	.	.
7.717	0.2470	0.48	.Q	V	.	.	.	.
7.733	0.2477	0.48	.Q	V	.	.	.	.
7.750	0.2484	0.48	.Q	V	.	.	.	.
7.767	0.2490	0.48	.Q	V	.	.	.	.
7.783	0.2497	0.48	.Q	V	.	.	.	.
7.800	0.2503	0.48	.Q	V	.	.	.	.
7.817	0.2510	0.48	.Q	V	.	.	.	.
7.833	0.2517	0.48	.Q	V	.	.	.	.
7.850	0.2523	0.48	.Q	V	.	.	.	.
7.867	0.2530	0.48	.Q	V	.	.	.	.
7.883	0.2537	0.48	.Q	V	.	.	.	.
7.900	0.2543	0.48	.Q	V	.	.	.	.
7.917	0.2550	0.48	.Q	V	.	.	.	.
7.933	0.2557	0.48	.Q	V	.	.	.	.
7.950	0.2563	0.49	.Q	V	.	.	.	.
7.967	0.2570	0.49	.Q	V	.	.	.	.
7.983	0.2577	0.49	.Q	V	.	.	.	.
8.000	0.2583	0.49	.Q	V	.	.	.	.
8.017	0.2590	0.49	.Q	V	.	.	.	.
8.033	0.2597	0.49	.Q	V	.	.	.	.
8.050	0.2604	0.49	.Q	V	.	.	.	.
8.067	0.2610	0.49	.Q	V	.	.	.	.
8.083	0.2617	0.49	.Q	V	.	.	.	.
8.100	0.2624	0.49	.Q	V	.	.	.	.
8.117	0.2631	0.49	.Q	V	.	.	.	.
8.133	0.2637	0.49	.Q	V	.	.	.	.
8.150	0.2644	0.49	.Q	V	.	.	.	.
8.167	0.2651	0.49	.Q	V	.	.	.	.
8.183	0.2658	0.49	.Q	V	.	.	.	.
8.200	0.2665	0.49	.Q	V	.	.	.	.
8.217	0.2671	0.49	.Q	V	.	.	.	.
8.233	0.2678	0.50	.Q	V	.	.	.	.
8.250	0.2685	0.50	.Q	V	.	.	.	.
8.267	0.2692	0.50	.Q	V	.	.	.	.
8.283	0.2699	0.50	.Q	V	.	.	.	.
8.300	0.2706	0.50	.Q	V	.	.	.	.
8.317	0.2712	0.50	.Q	V	.	.	.	.
8.333	0.2719	0.50	.Q	V	.	.	.	.
8.350	0.2726	0.50	.Q	V	.	.	.	.
8.367	0.2733	0.50	.Q	V	.	.	.	.
8.383	0.2740	0.50	.Q	V	.	.	.	.
8.400	0.2747	0.50	.Q	V	.	.	.	.
8.417	0.2754	0.50	.Q	V	.	.	.	.
8.433	0.2761	0.50	.Q	V	.	.	.	.
8.450	0.2768	0.50	.Q	V	.	.	.	.
8.467	0.2775	0.50	.Q	V	.	.	.	.
8.483	0.2782	0.50	.Q	V	.	.	.	.
8.500	0.2788	0.51	.Q	V	.	.	.	.

8.517	0.2795	0.51	.Q	V	.	.	.	.
8.533	0.2802	0.51	.Q	V	.	.	.	.
8.550	0.2809	0.51	.Q	V	.	.	.	.
8.567	0.2816	0.51	.Q	V	.	.	.	.
8.583	0.2823	0.51	.Q	V	.	.	.	.
8.600	0.2830	0.51	.Q	V	.	.	.	.
8.617	0.2837	0.51	.Q	V	.	.	.	.
8.633	0.2844	0.51	.Q	V	.	.	.	.
8.650	0.2851	0.51	.Q	V	.	.	.	.
8.667	0.2859	0.51	.Q	V	.	.	.	.
8.683	0.2866	0.51	.Q	V	.	.	.	.
8.700	0.2873	0.51	.Q	V	.	.	.	.
8.717	0.2880	0.51	.Q	V	.	.	.	.
8.733	0.2887	0.51	.Q	V	.	.	.	.
8.750	0.2894	0.51	.Q	V	.	.	.	.
8.767	0.2901	0.52	.Q	V	.	.	.	.
8.783	0.2908	0.52	.Q	V	.	.	.	.
8.800	0.2915	0.52	.Q	V	.	.	.	.
8.817	0.2922	0.52	.Q	V	.	.	.	.
8.833	0.2929	0.52	.Q	V	.	.	.	.
8.850	0.2937	0.52	.Q	V	.	.	.	.
8.867	0.2944	0.52	.Q	V	.	.	.	.
8.883	0.2951	0.52	.Q	V	.	.	.	.
8.900	0.2958	0.52	.Q	V	.	.	.	.
8.917	0.2965	0.52	.Q	V	.	.	.	.
8.933	0.2972	0.52	.Q	V	.	.	.	.
8.950	0.2980	0.52	.Q	V	.	.	.	.
8.967	0.2987	0.52	.Q	V	.	.	.	.
8.983	0.2994	0.52	.Q	V	.	.	.	.
9.000	0.3001	0.52	.Q	V	.	.	.	.
9.017	0.3009	0.53	.Q	V	.	.	.	.
9.033	0.3016	0.53	.Q	V	.	.	.	.
9.050	0.3023	0.53	.Q	V	.	.	.	.
9.067	0.3030	0.53	.Q	V	.	.	.	.
9.083	0.3038	0.53	.Q	V	.	.	.	.
9.100	0.3045	0.53	.Q	V	.	.	.	.
9.117	0.3052	0.53	.Q	V	.	.	.	.
9.133	0.3060	0.53	.Q	V	.	.	.	.
9.150	0.3067	0.53	.Q	V	.	.	.	.
9.167	0.3074	0.53	.Q	V	.	.	.	.
9.183	0.3082	0.53	.Q	V	.	.	.	.
9.200	0.3089	0.53	.Q	V	.	.	.	.
9.217	0.3096	0.53	.Q	V	.	.	.	.
9.233	0.3104	0.53	.Q	V	.	.	.	.
9.250	0.3111	0.54	.Q	V	.	.	.	.
9.267	0.3118	0.54	.Q	V	.	.	.	.
9.283	0.3126	0.54	.Q	V	.	.	.	.
9.300	0.3133	0.54	.Q	V	.	.	.	.
9.317	0.3141	0.54	.Q	V	.	.	.	.
9.333	0.3148	0.54	.Q	V	.	.	.	.
9.350	0.3156	0.54	.Q	V	.	.	.	.
9.367	0.3163	0.54	.Q	V	.	.	.	.
9.383	0.3170	0.54	.Q	V	.	.	.	.
9.400	0.3178	0.54	.Q	V	.	.	.	.
9.417	0.3185	0.54	.Q	V	.	.	.	.
9.433	0.3193	0.54	.Q	V	.	.	.	.
9.450	0.3200	0.54	.Q	V	.	.	.	.
9.467	0.3208	0.55	.Q	V	.	.	.	.
9.483	0.3215	0.55	.Q	V	.	.	.	.
9.500	0.3223	0.55	.Q	V	.	.	.	.
9.517	0.3231	0.55	.Q	V	.	.	.	.
9.533	0.3238	0.55	.Q	V	.	.	.	.
9.550	0.3246	0.55	.Q	V	.	.	.	.
9.567	0.3253	0.55	.Q	V	.	.	.	.
9.583	0.3261	0.55	.Q	V	.	.	.	.

9.600	0.3268	0.55	.Q	V .	.	.	.
9.617	0.3276	0.55	.Q	V .	.	.	.
9.633	0.3284	0.55	.Q	V .	.	.	.
9.650	0.3291	0.55	.Q	V .	.	.	.
9.667	0.3299	0.56	.Q	V .	.	.	.
9.683	0.3307	0.56	.Q	V .	.	.	.
9.700	0.3314	0.56	.Q	V .	.	.	.
9.717	0.3322	0.56	.Q	V .	.	.	.
9.733	0.3330	0.56	.Q	V .	.	.	.
9.750	0.3337	0.56	.Q	V .	.	.	.
9.767	0.3345	0.56	.Q	V .	.	.	.
9.783	0.3353	0.56	.Q	V .	.	.	.
9.800	0.3361	0.56	.Q	V .	.	.	.
9.817	0.3368	0.56	.Q	V .	.	.	.
9.833	0.3376	0.56	.Q	V .	.	.	.
9.850	0.3384	0.57	.Q	V .	.	.	.
9.867	0.3392	0.57	.Q	V .	.	.	.
9.883	0.3400	0.57	.Q	V .	.	.	.
9.900	0.3407	0.57	.Q	V .	.	.	.
9.917	0.3415	0.57	.Q	V .	.	.	.
9.933	0.3423	0.57	.Q	V .	.	.	.
9.950	0.3431	0.57	.Q	V .	.	.	.
9.967	0.3439	0.57	.Q	V .	.	.	.
9.983	0.3447	0.57	.Q	V .	.	.	.
10.000	0.3454	0.57	.Q	V .	.	.	.
10.017	0.3462	0.57	.Q	V .	.	.	.
10.033	0.3470	0.58	.Q	V .	.	.	.
10.050	0.3478	0.58	.Q	V .	.	.	.
10.067	0.3486	0.58	.Q	V .	.	.	.
10.083	0.3494	0.58	.Q	V .	.	.	.
10.100	0.3502	0.58	.Q	V .	.	.	.
10.117	0.3510	0.58	.Q	V .	.	.	.
10.133	0.3518	0.58	.Q	V .	.	.	.
10.150	0.3526	0.58	.Q	V.	.	.	.
10.167	0.3534	0.58	.Q	V.	.	.	.
10.183	0.3542	0.58	.Q	V.	.	.	.
10.200	0.3550	0.58	.Q	V.	.	.	.
10.217	0.3558	0.58	.Q	V.	.	.	.
10.233	0.3566	0.59	.Q	V.	.	.	.
10.250	0.3574	0.59	.Q	V.	.	.	.
10.267	0.3582	0.59	.Q	V.	.	.	.
10.283	0.3590	0.59	.Q	V.	.	.	.
10.300	0.3599	0.59	.Q	V.	.	.	.
10.317	0.3607	0.59	.Q	V.	.	.	.
10.333	0.3615	0.59	.Q	V.	.	.	.
10.350	0.3623	0.59	.Q	V.	.	.	.
10.367	0.3631	0.59	.Q	V.	.	.	.
10.383	0.3639	0.59	.Q	V.	.	.	.
10.400	0.3648	0.59	.Q	V.	.	.	.
10.417	0.3656	0.60	.Q	V.	.	.	.
10.433	0.3664	0.60	.Q	V.	.	.	.
10.450	0.3672	0.60	.Q	V.	.	.	.
10.467	0.3680	0.60	.Q	V.	.	.	.
10.483	0.3689	0.60	.Q	V.	.	.	.
10.500	0.3697	0.60	.Q	V.	.	.	.
10.517	0.3705	0.60	.Q	V.	.	.	.
10.533	0.3714	0.60	.Q	V.	.	.	.
10.550	0.3722	0.60	.Q	V.	.	.	.
10.567	0.3730	0.61	.Q	V.	.	.	.
10.583	0.3739	0.61	.Q	V.	.	.	.
10.600	0.3747	0.61	.Q	V.	.	.	.
10.617	0.3755	0.61	.Q	V.	.	.	.
10.633	0.3764	0.61	.Q	V.	.	.	.
10.650	0.3772	0.61	.Q	V.	.	.	.
10.667	0.3781	0.61	.Q	V.	.	.	.

10.683	0.3789	0.61	.Q	V.	.	.	.
10.700	0.3798	0.61	.Q	V.	.	.	.
10.717	0.3806	0.62	.Q	V.	.	.	.
10.733	0.3814	0.62	.Q	V.	.	.	.
10.750	0.3823	0.62	.Q	V.	.	.	.
10.767	0.3832	0.62	.Q	V.	.	.	.
10.783	0.3840	0.62	.Q	V.	.	.	.
10.800	0.3849	0.62	.Q	V.	.	.	.
10.817	0.3857	0.62	.Q	V.	.	.	.
10.833	0.3866	0.62	.Q	V.	.	.	.
10.850	0.3874	0.62	.Q	V.	.	.	.
10.867	0.3883	0.62	.Q	V.	.	.	.
10.883	0.3892	0.63	.Q	V.	.	.	.
10.900	0.3900	0.63	.Q	V.	.	.	.
10.917	0.3909	0.63	.Q	V.	.	.	.
10.933	0.3917	0.63	.Q	V	.	.	.
10.950	0.3926	0.63	.Q	V	.	.	.
10.967	0.3935	0.63	.Q	V	.	.	.
10.983	0.3944	0.63	.Q	V	.	.	.
11.000	0.3952	0.63	.Q	V	.	.	.
11.017	0.3961	0.64	.Q	V	.	.	.
11.033	0.3970	0.64	.Q	V	.	.	.
11.050	0.3979	0.64	.Q	V	.	.	.
11.067	0.3987	0.64	.Q	V	.	.	.
11.083	0.3996	0.64	.Q	V	.	.	.
11.100	0.4005	0.64	.Q	V	.	.	.
11.117	0.4014	0.64	.Q	V	.	.	.
11.133	0.4023	0.64	.Q	V	.	.	.
11.150	0.4032	0.65	.Q	V	.	.	.
11.167	0.4041	0.65	.Q	V	.	.	.
11.183	0.4050	0.65	.Q	V	.	.	.
11.200	0.4058	0.65	.Q	V	.	.	.
11.217	0.4067	0.65	.Q	V	.	.	.
11.233	0.4076	0.65	.Q	V	.	.	.
11.250	0.4085	0.65	.Q	V	.	.	.
11.267	0.4094	0.65	.Q	V	.	.	.
11.283	0.4103	0.65	.Q	V	.	.	.
11.300	0.4112	0.66	.Q	V	.	.	.
11.317	0.4121	0.66	.Q	V	.	.	.
11.333	0.4131	0.66	.Q	V	.	.	.
11.350	0.4140	0.66	.Q	V	.	.	.
11.367	0.4149	0.66	.Q	V	.	.	.
11.383	0.4158	0.66	.Q	V	.	.	.
11.400	0.4167	0.67	.Q	V	.	.	.
11.417	0.4176	0.67	.Q	V	.	.	.
11.433	0.4185	0.67	.Q	V	.	.	.
11.450	0.4195	0.67	.Q	V	.	.	.
11.467	0.4204	0.67	.Q	V	.	.	.
11.483	0.4213	0.67	.Q	V	.	.	.
11.500	0.4222	0.67	.Q	V	.	.	.
11.517	0.4232	0.67	.Q	V	.	.	.
11.533	0.4241	0.67	.Q	V	.	.	.
11.550	0.4250	0.68	.Q	V	.	.	.
11.567	0.4260	0.68	.Q	V	.	.	.
11.583	0.4269	0.68	.Q	V	.	.	.
11.600	0.4278	0.68	.Q	V	.	.	.
11.617	0.4288	0.68	.Q	V	.	.	.
11.633	0.4297	0.69	.Q	V	.	.	.
11.650	0.4307	0.69	.Q	.V	.	.	.
11.667	0.4316	0.69	.Q	.V	.	.	.
11.683	0.4326	0.69	.Q	.V	.	.	.
11.700	0.4335	0.69	.Q	.V	.	.	.
11.717	0.4345	0.69	.Q	.V	.	.	.
11.733	0.4354	0.69	.Q	.V	.	.	.
11.750	0.4364	0.69	.Q	.V	.	.	.

11.767	0.4373	0.70	.Q	.V	.	.	.
11.783	0.4383	0.70	.Q	.V	.	.	.
11.800	0.4393	0.70	.Q	.V	.	.	.
11.817	0.4402	0.70	.Q	.V	.	.	.
11.833	0.4412	0.70	.Q	.V	.	.	.
11.850	0.4422	0.71	.Q	.V	.	.	.
11.867	0.4431	0.71	.Q	.V	.	.	.
11.883	0.4441	0.71	.Q	.V	.	.	.
11.900	0.4451	0.71	.Q	.V	.	.	.
11.917	0.4461	0.71	.Q	.V	.	.	.
11.933	0.4470	0.71	.Q	.V	.	.	.
11.950	0.4480	0.71	.Q	.V	.	.	.
11.967	0.4490	0.71	.Q	.V	.	.	.
11.983	0.4500	0.72	.Q	.V	.	.	.
12.000	0.4510	0.72	.Q	.V	.	.	.
12.017	0.4520	0.73	.Q	.V	.	.	.
12.033	0.4530	0.73	.Q	.V	.	.	.
12.050	0.4540	0.74	.Q	.V	.	.	.
12.067	0.4550	0.74	.Q	.V	.	.	.
12.083	0.4561	0.75	.Q	.V	.	.	.
12.100	0.4571	0.75	. Q	.V	.	.	.
12.117	0.4582	0.76	. Q	.V	.	.	.
12.133	0.4592	0.77	. Q	.V	.	.	.
12.150	0.4603	0.77	. Q	.V	.	.	.
12.167	0.4614	0.78	. Q	.V	.	.	.
12.183	0.4624	0.78	. Q	.V	.	.	.
12.200	0.4635	0.79	. Q	.V	.	.	.
12.217	0.4646	0.79	. Q	.V	.	.	.
12.233	0.4657	0.79	. Q	.V	.	.	.
12.250	0.4668	0.79	. Q	.V	.	.	.
12.267	0.4679	0.80	. Q	.V	.	.	.
12.283	0.4690	0.80	. Q	.V	.	.	.
12.300	0.4701	0.80	. Q	. V	.	.	.
12.317	0.4712	0.80	. Q	. V	.	.	.
12.333	0.4723	0.80	. Q	. V	.	.	.
12.350	0.4734	0.81	. Q	. V	.	.	.
12.367	0.4745	0.81	. Q	. V	.	.	.
12.383	0.4756	0.81	. Q	. V	.	.	.
12.400	0.4768	0.81	. Q	. V	.	.	.
12.417	0.4779	0.81	. Q	. V	.	.	.
12.433	0.4790	0.81	. Q	. V	.	.	.
12.450	0.4801	0.82	. Q	. V	.	.	.
12.467	0.4813	0.82	. Q	. V	.	.	.
12.483	0.4824	0.82	. Q	. V	.	.	.
12.500	0.4835	0.83	. Q	. V	.	.	.
12.517	0.4847	0.83	. Q	. V	.	.	.
12.533	0.4858	0.83	. Q	. V	.	.	.
12.550	0.4870	0.83	. Q	. V	.	.	.
12.567	0.4881	0.83	. Q	. V	.	.	.
12.583	0.4893	0.83	. Q	. V	.	.	.
12.600	0.4904	0.84	. Q	. V	.	.	.
12.617	0.4916	0.84	. Q	. V	.	.	.
12.633	0.4927	0.84	. Q	. V	.	.	.
12.650	0.4939	0.84	. Q	. V	.	.	.
12.667	0.4950	0.84	. Q	. V	.	.	.
12.683	0.4962	0.85	. Q	. V	.	.	.
12.700	0.4974	0.85	. Q	. V	.	.	.
12.717	0.4985	0.85	. Q	. V	.	.	.
12.733	0.4997	0.86	. Q	. V	.	.	.
12.750	0.5009	0.86	. Q	. V	.	.	.
12.767	0.5021	0.86	. Q	. V	.	.	.
12.783	0.5033	0.86	. Q	. V	.	.	.
12.800	0.5045	0.86	. Q	. V	.	.	.
12.817	0.5057	0.87	. Q	. V	.	.	.
12.833	0.5069	0.87	. Q	. V	.	.	.

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12.850      0.5080      0.87  . Q       . V       .         .         .
12.867      0.5092      0.87  . Q       .  V      .         .         .
12.883      0.5105      0.87  . Q       .  V      .         .         .
12.900      0.5117      0.88  . Q       .  V      .         .         .
12.917      0.5129      0.88  . Q       .  V      .         .         .
12.933      0.5141      0.88  . Q       .  V      .         .         .
12.950      0.5153      0.89  . Q       .  V      .         .         .
12.967      0.5165      0.89  . Q       .  V      .         .         .
12.983      0.5178      0.89  . Q       .  V      .         .         .
13.000      0.5190      0.89  . Q       .  V      .         .         .
13.017      0.5202      0.90  . Q       .  V      .         .         .
13.033      0.5215      0.90  . Q       .  V      .         .         .
13.050      0.5227      0.90  . Q       .  V      .         .         .
13.067      0.5240      0.90  . Q       .  V      .         .         .
13.083      0.5252      0.90  . Q       .  V      .         .         .
13.100      0.5264      0.91  . Q       .  V      .         .         .
13.117      0.5277      0.91  . Q       .  V      .         .         .
13.133      0.5290      0.91  . Q       .  V      .         .         .
13.150      0.5302      0.92  . Q       .  V      .         .         .
13.167      0.5315      0.92  . Q       .  V      .         .         .
13.183      0.5328      0.93  . Q       .  V      .         .         .
13.200      0.5341      0.93  . Q       .  V      .         .         .
13.217      0.5353      0.93  . Q       .  V      .         .         .
13.233      0.5366      0.93  . Q       .  V      .         .         .
13.250      0.5379      0.93  . Q       .  V      .         .         .
13.267      0.5392      0.94  . Q       .  V      .         .         .
13.283      0.5405      0.94  . Q       .  V      .         .         .
13.300      0.5418      0.94  . Q       .  V      .         .         .
13.317      0.5431      0.94  . Q       .  V      .         .         .
13.333      0.5444      0.95  . Q       .  V      .         .         .
13.350      0.5457      0.95  . Q       .  V      .         .         .
13.367      0.5470      0.96  . Q       .  V      .         .         .
13.383      0.5483      0.96  . Q       .   V     .         .         .
13.400      0.5497      0.96  . Q       .   V     .         .         .
13.417      0.5510      0.97  . Q       .   V     .         .         .
13.433      0.5523      0.97  . Q       .   V     .         .         .
13.450      0.5537      0.97  . Q       .   V     .         .         .
13.467      0.5550      0.98  . Q       .   V     .         .         .
13.483      0.5564      0.98  . Q       .   V     .         .         .
13.500      0.5577      0.98  . Q       .   V     .         .         .
13.517      0.5591      0.98  . Q       .   V     .         .         .
13.533      0.5604      0.99  . Q       .   V     .         .         .
13.550      0.5618      0.99  . Q       .   V     .         .         .
13.567      0.5632      0.99  . Q       .   V     .         .         .
13.583      0.5646      1.00  . Q       .   V     .         .         .
13.600      0.5659      1.00  . Q       .   V     .         .         .
13.617      0.5673      1.01  . Q       .   V     .         .         .
13.633      0.5687      1.01  . Q       .   V     .         .         .
13.650      0.5701      1.02  . Q       .   V     .         .         .
13.667      0.5715      1.02  . Q       .   V     .         .         .
13.683      0.5729      1.02  . Q       .   V     .         .         .
13.700      0.5744      1.03  . Q       .   V     .         .         .
13.717      0.5758      1.03  . Q       .   V     .         .         .
13.733      0.5772      1.03  . Q       .   V     .         .         .
13.750      0.5786      1.03  . Q       .   V     .         .         .
13.767      0.5801      1.04  . Q       .   V     .         .         .
13.783      0.5815      1.04  . Q       .   V     .         .         .
13.800      0.5829      1.05  . Q       .   V     .         .         .
13.817      0.5844      1.05  . Q       .   V     .         .         .
13.833      0.5858      1.06  . Q       .   V     .         .         .
13.850      0.5873      1.07  . Q       .    V    .         .         .
13.867      0.5888      1.07  . Q       .    V    .         .         .
13.883      0.5903      1.07  . Q       .    V    .         .         .
13.900      0.5918      1.08  . Q       .    V    .         .         .
13.917      0.5932      1.08  . Q       .    V    .         .         .
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13.933	0.5947	1.08	.	Q	.			V	.		.	.
13.950	0.5962	1.09	.	Q	.			V	.		.	.
13.967	0.5977	1.09	.	Q	.			V	.		.	.
13.983	0.5992	1.09	.	Q	.			V	.		.	.
14.000	0.6008	1.10	.	Q	.			V	.		.	.
14.017	0.6023	1.11	.	Q	.			V	.		.	.
14.033	0.6038	1.12	.	Q	.			V	.		.	.
14.050	0.6054	1.12	.	Q	.			V	.		.	.
14.067	0.6069	1.13	.		Q	.		V	.		.	.
14.083	0.6085	1.14	.		Q	.		V	.		.	.
14.100	0.6101	1.15	.		Q	.		V	.		.	.
14.117	0.6117	1.15	.		Q	.		V	.		.	.
14.133	0.6133	1.16	.		Q	.		V	.		.	.
14.150	0.6148	1.16	.		Q	.		V	.		.	.
14.167	0.6165	1.16	.		Q	.		V	.		.	.
14.183	0.6181	1.17	.		Q	.		V	.		.	.
14.200	0.6197	1.17	.		Q	.		V	.		.	.
14.217	0.6213	1.18	.		Q	.		V	.		.	.
14.233	0.6229	1.19	.		Q	.		V	.		.	.
14.250	0.6246	1.19	.		Q	.		V	.		.	.
14.267	0.6262	1.20	.		Q	.		V	.		.	.
14.283	0.6279	1.21	.		Q	.			V	.	.	.
14.300	0.6296	1.22	.		Q	.			V	.	.	.
14.317	0.6313	1.22	.		Q	.			V	.	.	.
14.333	0.6330	1.23	.		Q	.			V	.	.	.
14.350	0.6347	1.23	.		Q	.			V	.	.	.
14.367	0.6364	1.24	.		Q	.			V	.	.	.
14.383	0.6381	1.24	.		Q	.			V	.	.	.
14.400	0.6398	1.25	.		Q	.			V	.	.	.
14.417	0.6415	1.25	.		Q	.			V	.	.	.
14.433	0.6432	1.26	.		Q	.			V	.	.	.
14.450	0.6450	1.27	.		Q	.			V	.	.	.
14.467	0.6467	1.27	.		Q	.			V	.	.	.
14.483	0.6485	1.28	.		Q	.			V	.	.	.
14.500	0.6503	1.29	.		Q	.			V	.	.	.
14.517	0.6521	1.30	.		Q	.			V	.	.	.
14.533	0.6539	1.31	.		Q	.			V	.	.	.
14.550	0.6557	1.32	.		Q	.			V	.	.	.
14.567	0.6575	1.33	.		Q	.			V	.	.	.
14.583	0.6594	1.33	.		Q	.			V	.	.	.
14.600	0.6612	1.34	.		Q	.			V	.	.	.
14.617	0.6631	1.34	.		Q	.			V	.	.	.
14.633	0.6649	1.35	.		Q	.			V	.	.	.
14.650	0.6668	1.35	.		Q	.				V	.	.
14.667	0.6687	1.36	.		Q	.				V	.	.
14.683	0.6706	1.37	.		Q	.				V	.	.
14.700	0.6725	1.39	.		Q	.				V	.	.
14.717	0.6744	1.40	.		Q	.				V	.	.
14.733	0.6763	1.41	.		Q	.				V	.	.
14.750	0.6783	1.42	.		Q	.				V	.	.
14.767	0.6803	1.43	.		Q	.				V	.	.
14.783	0.6822	1.44	.		Q	.				V	.	.
14.800	0.6842	1.45	.		Q	.				V	.	.
14.817	0.6862	1.46	.		Q	.				V	.	.
14.833	0.6883	1.46	.		Q	.				V	.	.
14.850	0.6903	1.47	.		Q	.				V	.	.
14.867	0.6923	1.48	.		Q	.				V	.	.
14.883	0.6944	1.48	.		Q	.				V	.	.
14.900	0.6964	1.50	.		Q	.				V	.	.
14.917	0.6985	1.51	.			Q	.			V	.	.
14.933	0.7006	1.53	.			Q	.			V	.	.
14.950	0.7028	1.55	.			Q	.			V	.	.
14.967	0.7049	1.56	.			Q	.				V .	.
14.983	0.7071	1.58	.			Q	.				V .	.
15.000	0.7093	1.59	.			Q	.				V .	.

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15.017      0.7115      1.60  .   Q     .       V .         .         .
15.033      0.7137      1.61  .   Q     .       V .         .         .
15.050      0.7159      1.62  .   Q     .       V .         .         .
15.067      0.7182      1.63  .   Q     .       V .         .         .
15.083      0.7204      1.64  .   Q     .       V .         .         .
15.100      0.7227      1.65  .   Q     .       V .         .         .
15.117      0.7250      1.66  .   Q     .       V .         .         .
15.133      0.7273      1.68  .   Q     .       V .         .         .
15.150      0.7297      1.71  .   Q     .       V .         .         .
15.167      0.7320      1.73  .   Q     .       V .         .         .
15.183      0.7344      1.75  .   Q     .       V .         .         .
15.200      0.7369      1.77  .   Q     .       V .         .         .
15.217      0.7394      1.79  .   Q     .       V .         .         .
15.233      0.7419      1.81  .   Q     .       V .         .         .
15.250      0.7444      1.82  .   Q     .        V.         .         .
15.267      0.7469      1.84  .   Q     .        V.         .         .
15.283      0.7494      1.85  .   Q     .        V.         .         .
15.300      0.7520      1.86  .   Q     .        V.         .         .
15.317      0.7546      1.88  .   Q     .        V.         .         .
15.333      0.7572      1.90  .    Q    .        V.         .         .
15.350      0.7599      1.96  .    Q    .        V.         .         .
15.367      0.7627      2.03  .    Q    .        V.         .         .
15.383      0.7656      2.10  .    Q    .        V.         .         .
15.400      0.7686      2.17  .    Q    .        V.         .         .
15.417      0.7717      2.24  .    Q    .        V.         .         .
15.433      0.7749      2.31  .     Q   .        V.         .         .
15.450      0.7781      2.37  .     Q   .        V.         .         .
15.467      0.7814      2.39  .     Q   .        V.         .         .
15.483      0.7847      2.42  .     Q   .         V         .         .
15.500      0.7881      2.45  .     Q   .         V         .         .
15.517      0.7915      2.47  .     Q   .         V         .         .
15.533      0.7950      2.50  .     Q   .         V         .         .
15.550      0.7984      2.53  .     Q   .         V         .         .
15.567      0.8020      2.57  .     Q   .         V         .         .
15.583      0.8056      2.63  .     Q   .         V         .         .
15.600      0.8093      2.70  .      Q  .         V         .         .
15.617      0.8131      2.76  .      Q  .         V         .         .
15.633      0.8170      2.82  .      Q  .         V         .         .
15.650      0.8210      2.88  .      Q  .         V         .         .
15.667      0.8250      2.94  .      Q  .         .V        .         .
15.683      0.8292      3.00  .      Q  .         .V        .         .
15.700      0.8334      3.06  .       Q .         .V        .         .
15.717      0.8377      3.11  .       Q .         .V        .         .
15.733      0.8420      3.17  .       Q .         .V        .         .
15.750      0.8465      3.23  .       Q .         .V        .         .
15.767      0.8510      3.28  .       Q .         .V        .         .
15.783      0.8556      3.36  .       Q .         .V        .         .
15.800      0.8605      3.54  .        Q.         .V        .         .
15.817      0.8656      3.74  .        Q.         . V       .         .
15.833      0.8711      3.93  .         Q         . V       .         .
15.850      0.8767      4.13  .         Q         . V       .         .
15.867      0.8827      4.33  .         .Q        . V       .         .
15.883      0.8889      4.53  .         . Q       . V       .         .
15.900      0.8955      4.74  .         . Q       . V       .         .
15.917      0.9023      4.96  .         .  Q      .  V      .         .
15.933      0.9095      5.19  .         .  Q      .  V      .         .
15.950      0.9169      5.42  .         .   Q     .  V      .         .
15.967      0.9247      5.65  .         .   Q     .  V      .         .
15.983      0.9328      5.88  .         .    Q    .  V      .         .
16.000      0.9412      6.11  .         .     Q   .   V     .         .
16.017      0.9507      6.88  .         .       Q .   V     .         .
16.033      0.9620      8.19  .         .         .Q  V     .         .
16.050      0.9751      9.51  .         .         .   VQ    .         .
16.067      0.9900     10.82  .         .         .    V  Q .         .
16.083      1.0067     12.13  .         .         .    V    . Q       .
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16.100      1.0252     13.45  .         .         .     V   .    Q    .
16.117      1.0460     15.09  .         .         .     V   .         Q
16.133      1.0651     13.84  .         .         .      V  .      Q  .
16.150      1.0818     12.18  .         .         .      V  . Q       .
16.167      1.0963     10.52  .         .         .      QV .         .
16.183      1.1085      8.85  .         .         .  Q    V .         .
16.200      1.1184      7.19  .         .       Q.        V .         .
16.217      1.1260      5.53  .         .   Q     .        V .         .
16.233      1.1316      4.05  .         Q         .        V .         .
16.250      1.1367      3.70  .        Q.         .         V.         .
16.267      1.1416      3.53  .        Q.         .         V.         .
16.283      1.1462      3.36  .       Q .         .         V.         .
16.300      1.1506      3.19  .       Q .         .         V.         .
16.317      1.1547      3.02  .      Q  .         .         V.         .
16.333      1.1587      2.85  .      Q  .         .         V.         .
16.350      1.1624      2.69  .      Q  .         .         V.         .
16.367      1.1659      2.58  .     Q   .         .         V.         .
16.383      1.1693      2.48  .     Q   .         .         V.         .
16.400      1.1726      2.37  .     Q   .         .         V.         .
16.417      1.1757      2.26  .    Q    .         .          V         .
16.433      1.1787      2.16  .    Q    .         .          V         .
16.450      1.1815      2.05  .    Q    .         .          V         .
16.467      1.1842      1.97  .    Q    .         .          V         .
16.483      1.1869      1.93  .    Q    .         .          V         .
16.500      1.1895      1.89  .    Q    .         .          V         .
16.517      1.1921      1.85  .   Q     .         .          V         .
16.533      1.1945      1.81  .   Q     .         .          V         .
16.550      1.1970      1.77  .   Q     .         .          V         .
16.567      1.1994      1.73  .   Q     .         .          V         .
16.583      1.2017      1.70  .   Q     .         .          V         .
16.600      1.2040      1.67  .   Q     .         .          V         .
16.617      1.2063      1.64  .   Q     .         .          V         .
16.633      1.2085      1.62  .   Q     .         .          V         .
16.650      1.2107      1.59  .   Q     .         .          V         .
16.667      1.2129      1.56  .   Q     .         .          V         .
16.683      1.2150      1.53  .   Q     .         .          .V        .
16.700      1.2171      1.51  .   Q     .         .          .V        .
16.717      1.2191      1.49  .  Q      .         .          .V        .
16.733      1.2211      1.47  .  Q      .         .          .V        .
16.750      1.2231      1.45  .  Q      .         .          .V        .
16.767      1.2251      1.43  .  Q      .         .          .V        .
16.783      1.2270      1.41  .  Q      .         .          .V        .
16.800      1.2290      1.39  .  Q      .         .          .V        .
16.817      1.2309      1.37  .  Q      .         .          .V        .
16.833      1.2327      1.36  .  Q      .         .          .V        .
16.850      1.2346      1.34  .  Q      .         .          .V        .
16.867      1.2364      1.33  .  Q      .         .          .V        .
16.883      1.2382      1.31  .  Q      .         .          .V        .
16.900      1.2400      1.29  .  Q      .         .          .V        .
16.917      1.2418      1.28  .  Q      .         .          .V        .
16.933      1.2435      1.27  .  Q      .         .          .V        .
16.950      1.2452      1.25  .  Q      .         .          .V        .
16.967      1.2469      1.24  .  Q      .         .          .V        .
16.983      1.2486      1.23  .  Q      .         .          .V        .
17.000      1.2503      1.22  .  Q      .         .          .V        .
17.017      1.2520      1.20  .  Q      .         .          .V        .
17.033      1.2536      1.19  .  Q      .         .          . V       .
17.050      1.2552      1.18  .  Q      .         .          . V       .
17.067      1.2568      1.16  .  Q      .         .          . V       .
17.083      1.2584      1.15  .  Q      .         .          . V       .
17.100      1.2600      1.14  .  Q      .         .          . V       .
17.117      1.2615      1.13  . Q       .         .          . V       .
17.133      1.2631      1.11  . Q       .         .          . V       .
17.150      1.2646      1.11  . Q       .         .          . V       .
17.167      1.2661      1.10  . Q       .         .          . V       .
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17.183      1.2676      1.09  . Q       .         .         . V       .
17.200      1.2691      1.08  . Q       .         .         . V       .
17.217      1.2706      1.07  . Q       .         .         . V       .
17.233      1.2720      1.06  . Q       .         .         . V       .
17.250      1.2735      1.05  . Q       .         .         . V       .
17.267      1.2749      1.04  . Q       .         .         . V       .
17.283      1.2763      1.04  . Q       .         .         . V       .
17.300      1.2777      1.03  . Q       .         .         . V       .
17.317      1.2792      1.02  . Q       .         .         . V       .
17.333      1.2805      1.01  . Q       .         .         . V       .
17.350      1.2819      1.01  . Q       .         .         . V       .
17.367      1.2833      1.00  . Q       .         .         . V       .
17.383      1.2847      0.99  . Q       .         .         . V       .
17.400      1.2860      0.98  . Q       .         .         . V       .
17.417      1.2874      0.98  . Q       .         .         . V       .
17.433      1.2887      0.97  . Q       .         .         . V       .
17.450      1.2900      0.96  . Q       .         .         . V       .
17.467      1.2914      0.96  . Q       .         .         . V       .
17.483      1.2927      0.95  . Q       .         .         .  V      .
17.500      1.2940      0.95  . Q       .         .         .  V      .
17.517      1.2953      0.94  . Q       .         .         .  V      .
17.533      1.2966      0.93  . Q       .         .         .  V      .
17.550      1.2978      0.93  . Q       .         .         .  V      .
17.567      1.2991      0.92  . Q       .         .         .  V      .
17.583      1.3004      0.92  . Q       .         .         .  V      .
17.600      1.3016      0.91  . Q       .         .         .  V      .
17.617      1.3029      0.91  . Q       .         .         .  V      .
17.633      1.3041      0.90  . Q       .         .         .  V      .
17.650      1.3053      0.89  . Q       .         .         .  V      .
17.667      1.3066      0.89  . Q       .         .         .  V      .
17.683      1.3078      0.88  . Q       .         .         .  V      .
17.700      1.3090      0.88  . Q       .         .         .  V      .
17.717      1.3102      0.87  . Q       .         .         .  V      .
17.733      1.3114      0.87  . Q       .         .         .  V      .
17.750      1.3126      0.86  . Q       .         .         .  V      .
17.767      1.3138      0.86  . Q       .         .         .  V      .
17.783      1.3149      0.86  . Q       .         .         .  V      .
17.800      1.3161      0.85  . Q       .         .         .  V      .
17.817      1.3173      0.85  . Q       .         .         .  V      .
17.833      1.3184      0.84  . Q       .         .         .  V      .
17.850      1.3196      0.84  . Q       .         .         .  V      .
17.867      1.3207      0.83  . Q       .         .         .  V      .
17.883      1.3219      0.83  . Q       .         .         .  V      .
17.900      1.3230      0.82  . Q       .         .         .  V      .
17.917      1.3241      0.82  . Q       .         .         .  V      .
17.933      1.3253      0.82  . Q       .         .         .  V      .
17.950      1.3264      0.81  . Q       .         .         .  V      .
17.967      1.3275      0.81  . Q       .         .         .  V      .
17.983      1.3286      0.80  . Q       .         .         .  V      .
18.000      1.3297      0.80  . Q       .         .         .  V      .
18.017      1.3308      0.80  . Q       .         .         .   V     .
18.033      1.3319      0.79  . Q       .         .         .   V     .
18.050      1.3330      0.78  . Q       .         .         .   V     .
18.067      1.3340      0.77  . Q       .         .         .   V     .
18.083      1.3351      0.76  . Q       .         .         .   V     .
18.100      1.3361      0.75  .Q        .         .         .   V     .
18.117      1.3371      0.74  .Q        .         .         .   V     .
18.133      1.3381      0.73  .Q        .         .         .   V     .
18.150      1.3391      0.72  .Q        .         .         .   V     .
18.167      1.3401      0.72  .Q        .         .         .   V     .
18.183      1.3411      0.71  .Q        .         .         .   V     .
18.200      1.3421      0.71  .Q        .         .         .   V     .
18.217      1.3430      0.71  .Q        .         .         .   V     .
18.233      1.3440      0.70  .Q        .         .         .   V     .
18.250      1.3450      0.70  .Q        .         .         .   V     .
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18.267	1.3459	0.70	.Q	.	.	.	V	.
18.283	1.3469	0.69	.Q	.	.	.	V	.
18.300	1.3478	0.69	.Q	.	.	.	V	.
18.317	1.3488	0.69	.Q	.	.	.	V	.
18.333	1.3497	0.68	.Q	.	.	.	V	.
18.350	1.3507	0.68	.Q	.	.	.	V	.
18.367	1.3516	0.68	.Q	.	.	.	V	.
18.383	1.3525	0.68	.Q	.	.	.	V	.
18.400	1.3535	0.67	.Q	.	.	.	V	.
18.417	1.3544	0.67	.Q	.	.	.	V	.
18.433	1.3553	0.67	.Q	.	.	.	V	.
18.450	1.3562	0.67	.Q	.	.	.	V	.
18.467	1.3571	0.66	.Q	.	.	.	V	.
18.483	1.3581	0.66	.Q	.	.	.	V	.
18.500	1.3590	0.66	.Q	.	.	.	V	.
18.517	1.3599	0.65	.Q	.	.	.	V	.
18.533	1.3608	0.65	.Q	.	.	.	V	.
18.550	1.3616	0.65	.Q	.	.	.	V	.
18.567	1.3625	0.65	.Q	.	.	.	V	.
18.583	1.3634	0.64	.Q	.	.	.	V	.
18.600	1.3643	0.64	.Q	.	.	.	V	.
18.617	1.3652	0.64	.Q	.	.	.	V	.
18.633	1.3661	0.64	.Q	.	.	.	V	.
18.650	1.3669	0.63	.Q	.	.	.	V	.
18.667	1.3678	0.63	.Q	.	.	.	V	.
18.683	1.3687	0.63	.Q	.	.	.	V	.
18.700	1.3695	0.63	.Q	.	.	.	V	.
18.717	1.3704	0.63	.Q	.	.	.	V	.
18.733	1.3713	0.62	.Q	.	.	.	V	.
18.750	1.3721	0.62	.Q	.	.	.	V	.
18.767	1.3730	0.62	.Q	.	.	.	V	.
18.783	1.3738	0.62	.Q	.	.	.	V	.
18.800	1.3747	0.61	.Q	.	.	.	V	.
18.817	1.3755	0.61	.Q	.	.	.	V	.
18.833	1.3764	0.61	.Q	.	.	.	V	.
18.850	1.3772	0.61	.Q	.	.	.	V	.
18.867	1.3780	0.61	.Q	.	.	.	V	.
18.883	1.3789	0.60	.Q	.	.	.	V	.
18.900	1.3797	0.60	.Q	.	.	.	V	.
18.917	1.3805	0.60	.Q	.	.	.	V	.
18.933	1.3813	0.60	.Q	.	.	.	V	.
18.950	1.3822	0.60	.Q	.	.	.	V	.
18.967	1.3830	0.59	.Q	.	.	.	V	.
18.983	1.3838	0.59	.Q	.	.	.	V	.
19.000	1.3846	0.59	.Q	.	.	.	V	.
19.017	1.3854	0.59	.Q	.	.	.	V	.
19.033	1.3862	0.59	.Q	.	.	.	V	.
19.050	1.3870	0.58	.Q	.	.	.	V	.
19.067	1.3878	0.58	.Q	.	.	.	V	.
19.083	1.3886	0.58	.Q	.	.	.	V	.
19.100	1.3894	0.58	.Q	.	.	.	V	.
19.117	1.3902	0.58	.Q	.	.	.	V	.
19.133	1.3910	0.57	.Q	.	.	.	V	.
19.150	1.3918	0.57	.Q	.	.	.	V	.
19.167	1.3926	0.57	.Q	.	.	.	V	.
19.183	1.3934	0.57	.Q	.	.	.	V	.
19.200	1.3941	0.57	.Q	.	.	.	V	.
19.217	1.3949	0.57	.Q	.	.	.	V	.
19.233	1.3957	0.56	.Q	.	.	.	V	.
19.250	1.3965	0.56	.Q	.	.	.	V	.
19.267	1.3972	0.56	.Q	.	.	.	V	.
19.283	1.3980	0.56	.Q	.	.	.	V	.
19.300	1.3988	0.56	.Q	.	.	.	V	.
19.317	1.3996	0.56	.Q	.	.	.	V	.
19.333	1.4003	0.55	.Q	.	.	.	V	.

19.350	1.4011	0.55	.Q	.	.	.	V	.
19.367	1.4018	0.55	.Q	.	.	.	V	.
19.383	1.4026	0.55	.Q	.	.	.	V	.
19.400	1.4033	0.55	.Q	.	.	.	V	.
19.417	1.4041	0.55	.Q	.	.	.	V	.
19.433	1.4048	0.54	.Q	.	.	.	V	.
19.450	1.4056	0.54	.Q	.	.	.	V	.
19.467	1.4063	0.54	.Q	.	.	.	V	.
19.483	1.4071	0.54	.Q	.	.	.	V	.
19.500	1.4078	0.54	.Q	.	.	.	V	.
19.517	1.4086	0.54	.Q	.	.	.	V	.
19.533	1.4093	0.54	.Q	.	.	.	V	.
19.550	1.4100	0.53	.Q	.	.	.	V	.
19.567	1.4108	0.53	.Q	.	.	.	V	.
19.583	1.4115	0.53	.Q	.	.	.	V	.
19.600	1.4122	0.53	.Q	.	.	.	V	.
19.617	1.4130	0.53	.Q	.	.	.	V	.
19.633	1.4137	0.53	.Q	.	.	.	V	.
19.650	1.4144	0.53	.Q	.	.	.	V	.
19.667	1.4151	0.52	.Q	.	.	.	V	.
19.683	1.4159	0.52	.Q	.	.	.	V	.
19.700	1.4166	0.52	.Q	.	.	.	V	.
19.717	1.4173	0.52	.Q	.	.	.	V	.
19.733	1.4180	0.52	.Q	.	.	.	V	.
19.750	1.4187	0.52	.Q	.	.	.	V	.
19.767	1.4194	0.52	.Q	.	.	.	V	.
19.783	1.4201	0.51	.Q	.	.	.	V	.
19.800	1.4208	0.51	.Q	.	.	.	V	.
19.817	1.4215	0.51	.Q	.	.	.	V	.
19.833	1.4222	0.51	.Q	.	.	.	V	.
19.850	1.4229	0.51	.Q	.	.	.	V	.
19.867	1.4236	0.51	.Q	.	.	.	V	.
19.883	1.4243	0.51	.Q	.	.	.	V	.
19.900	1.4250	0.51	.Q	.	.	.	V	.
19.917	1.4257	0.50	.Q	.	.	.	V	.
19.933	1.4264	0.50	.Q	.	.	.	V	.
19.950	1.4271	0.50	.Q	.	.	.	V	.
19.967	1.4278	0.50	.Q	.	.	.	V	.
19.983	1.4285	0.50	.Q	.	.	.	V	.
20.000	1.4292	0.50	.Q	.	.	.	V	.
20.017	1.4299	0.50	.Q	.	.	.	V	.
20.033	1.4305	0.50	.Q	.	.	.	V	.
20.050	1.4312	0.49	.Q	.	.	.	V	.
20.067	1.4319	0.49	.Q	.	.	.	V	.
20.083	1.4326	0.49	.Q	.	.	.	V	.
20.100	1.4333	0.49	.Q	.	.	.	V	.
20.117	1.4339	0.49	.Q	.	.	.	V	.
20.133	1.4346	0.49	.Q	.	.	.	V	.
20.150	1.4353	0.49	.Q	.	.	.	V	.
20.167	1.4359	0.49	.Q	.	.	.	V	.
20.183	1.4366	0.48	.Q	.	.	.	V	.
20.200	1.4373	0.48	.Q	.	.	.	V	.
20.217	1.4379	0.48	.Q	.	.	.	V	.
20.233	1.4386	0.48	.Q	.	.	.	V	.
20.250	1.4393	0.48	.Q	.	.	.	V	.
20.267	1.4399	0.48	.Q	.	.	.	V	.
20.283	1.4406	0.48	.Q	.	.	.	V	.
20.300	1.4412	0.48	.Q	.	.	.	V	.
20.317	1.4419	0.48	.Q	.	.	.	V	.
20.333	1.4426	0.48	.Q	.	.	.	V	.
20.350	1.4432	0.47	.Q	.	.	.	V	.
20.367	1.4439	0.47	.Q	.	.	.	V	.
20.383	1.4445	0.47	.Q	.	.	.	V	.
20.400	1.4452	0.47	.Q	.	.	.	V	.
20.417	1.4458	0.47	.Q	.	.	.	V	.

20.433	1.4465	0.47	.Q	.	.	.	V	.
20.450	1.4471	0.47	.Q	.	.	.	V	.
20.467	1.4477	0.47	.Q	.	.	.	V	.
20.483	1.4484	0.47	.Q	.	.	.	V	.
20.500	1.4490	0.46	.Q	.	.	.	V	.
20.517	1.4497	0.46	.Q	.	.	.	V	.
20.533	1.4503	0.46	.Q	.	.	.	V	.
20.550	1.4509	0.46	.Q	.	.	.	V	.
20.567	1.4516	0.46	.Q	.	.	.	V	.
20.583	1.4522	0.46	.Q	.	.	.	V	.
20.600	1.4528	0.46	.Q	.	.	.	V	.
20.617	1.4535	0.46	.Q	.	.	.	V	.
20.633	1.4541	0.46	.Q	.	.	.	V	.
20.650	1.4547	0.46	.Q	.	.	.	V	.
20.667	1.4554	0.45	.Q	.	.	.	V	.
20.683	1.4560	0.45	.Q	.	.	.	V	.
20.700	1.4566	0.45	.Q	.	.	.	V	.
20.717	1.4572	0.45	.Q	.	.	.	V	.
20.733	1.4578	0.45	.Q	.	.	.	V	.
20.750	1.4585	0.45	.Q	.	.	.	V	.
20.767	1.4591	0.45	.Q	.	.	.	V	.
20.783	1.4597	0.45	.Q	.	.	.	V	.
20.800	1.4603	0.45	.Q	.	.	.	V	.
20.817	1.4609	0.45	.Q	.	.	.	V	.
20.833	1.4615	0.45	.Q	.	.	.	V	.
20.850	1.4622	0.44	.Q	.	.	.	V	.
20.867	1.4628	0.44	.Q	.	.	.	V	.
20.883	1.4634	0.44	.Q	.	.	.	V	.
20.900	1.4640	0.44	.Q	.	.	.	V	.
20.917	1.4646	0.44	.Q	.	.	.	V	.
20.933	1.4652	0.44	.Q	.	.	.	V	.
20.950	1.4658	0.44	.Q	.	.	.	V	.
20.967	1.4664	0.44	.Q	.	.	.	V	.
20.983	1.4670	0.44	.Q	.	.	.	V	.
21.000	1.4676	0.44	.Q	.	.	.	V	.
21.017	1.4682	0.44	.Q	.	.	.	V	.
21.033	1.4688	0.44	.Q	.	.	.	V	.
21.050	1.4694	0.43	.Q	.	.	.	V	.
21.067	1.4700	0.43	.Q	.	.	.	V	.
21.083	1.4706	0.43	.Q	.	.	.	V	.
21.100	1.4712	0.43	.Q	.	.	.	V	.
21.117	1.4718	0.43	.Q	.	.	.	V	.
21.133	1.4724	0.43	.Q	.	.	.	V	.
21.150	1.4730	0.43	.Q	.	.	.	V	.
21.167	1.4736	0.43	.Q	.	.	.	V	.
21.183	1.4742	0.43	.Q	.	.	.	V	.
21.200	1.4748	0.43	.Q	.	.	.	V	.
21.217	1.4753	0.43	.Q	.	.	.	V	.
21.233	1.4759	0.43	.Q	.	.	.	V	.
21.250	1.4765	0.42	.Q	.	.	.	V	.
21.267	1.4771	0.42	.Q	.	.	.	V	.
21.283	1.4777	0.42	.Q	.	.	.	V	.
21.300	1.4783	0.42	.Q	.	.	.	V	.
21.317	1.4788	0.42	.Q	.	.	.	V	.
21.333	1.4794	0.42	.Q	.	.	.	V	.
21.350	1.4800	0.42	.Q	.	.	.	V	.
21.367	1.4806	0.42	.Q	.	.	.	V	.
21.383	1.4812	0.42	.Q	.	.	.	V	.
21.400	1.4817	0.42	.Q	.	.	.	V	.
21.417	1.4823	0.42	.Q	.	.	.	V	.
21.433	1.4829	0.42	.Q	.	.	.	V	.
21.450	1.4834	0.42	.Q	.	.	.	V	.
21.467	1.4840	0.41	.Q	.	.	.	V	.
21.483	1.4846	0.41	.Q	.	.	.	V	.
21.500	1.4852	0.41	.Q	.	.	.	V	.

```
21.517      1.4857      0.41  .Q        .         .         .      V  .
21.533      1.4863      0.41  .Q        .         .         .      V  .
21.550      1.4869      0.41  .Q        .         .         .      V  .
21.567      1.4874      0.41  .Q        .         .         .       V .
21.583      1.4880      0.41  .Q        .         .         .       V .
21.600      1.4886      0.41  .Q        .         .         .       V .
21.617      1.4891      0.41  .Q        .         .         .       V .
21.633      1.4897      0.41  .Q        .         .         .       V .
21.650      1.4902      0.41  .Q        .         .         .       V .
21.667      1.4908      0.41  .Q        .         .         .       V .
21.683      1.4914      0.41  .Q        .         .         .       V .
21.700      1.4919      0.40  .Q        .         .         .       V .
21.717      1.4925      0.40  .Q        .         .         .       V .
21.733      1.4930      0.40  .Q        .         .         .       V .
21.750      1.4936      0.40  .Q        .         .         .       V .
21.767      1.4941      0.40  .Q        .         .         .       V .
21.783      1.4947      0.40  .Q        .         .         .       V .
21.800      1.4952      0.40  .Q        .         .         .       V .
21.817      1.4958      0.40  .Q        .         .         .       V .
21.833      1.4963      0.40  .Q        .         .         .       V .
21.850      1.4969      0.40  .Q        .         .         .       V .
21.867      1.4974      0.40  .Q        .         .         .       V .
21.883      1.4980      0.40  .Q        .         .         .       V .
21.900      1.4985      0.40  .Q        .         .         .       V .
21.917      1.4991      0.40  .Q        .         .         .       V .
21.933      1.4996      0.40  .Q        .         .         .       V .
21.950      1.5002      0.39  .Q        .         .         .       V .
21.967      1.5007      0.39  .Q        .         .         .       V .
21.983      1.5013      0.39  .Q        .         .         .       V .
22.000      1.5018      0.39  .Q        .         .         .       V .
22.017      1.5023      0.39  .Q        .         .         .       V .
22.033      1.5029      0.39  .Q        .         .         .       V .
22.050      1.5034      0.39  .Q        .         .         .       V .
22.067      1.5040      0.39  .Q        .         .         .       V .
22.083      1.5045      0.39  .Q        .         .         .       V .
22.100      1.5050      0.39  .Q        .         .         .       V .
22.117      1.5056      0.39  .Q        .         .         .       V .
22.133      1.5061      0.39  .Q        .         .         .       V .
22.150      1.5066      0.39  .Q        .         .         .       V .
22.167      1.5072      0.39  .Q        .         .         .       V .
22.183      1.5077      0.39  .Q        .         .         .       V .
22.200      1.5082      0.39  .Q        .         .         .       V .
22.217      1.5088      0.38  .Q        .         .         .       V .
22.233      1.5093      0.38  .Q        .         .         .       V .
22.250      1.5098      0.38  .Q        .         .         .       V .
22.267      1.5103      0.38  .Q        .         .         .       V .
22.283      1.5109      0.38  .Q        .         .         .       V .
22.300      1.5114      0.38  .Q        .         .         .       V .
22.317      1.5119      0.38  .Q        .         .         .       V .
22.333      1.5124      0.38  .Q        .         .         .       V .
22.350      1.5130      0.38  .Q        .         .         .       V .
22.367      1.5135      0.38  .Q        .         .         .       V .
22.383      1.5140      0.38  .Q        .         .         .       V .
22.400      1.5145      0.38  .Q        .         .         .       V .
22.417      1.5151      0.38  .Q        .         .         .       V .
22.433      1.5156      0.38  .Q        .         .         .       V .
22.450      1.5161      0.38  Q         .         .         .       V .
22.467      1.5166      0.38  Q         .         .         .       V .
22.483      1.5171      0.38  Q         .         .         .       V .
22.500      1.5176      0.38  Q         .         .         .       V .
22.517      1.5182      0.37  Q         .         .         .       V .
22.533      1.5187      0.37  Q         .         .         .       V .
22.550      1.5192      0.37  Q         .         .         .       V .
22.567      1.5197      0.37  Q         .         .         .       V .
22.583      1.5202      0.37  Q         .         .         .       V .
```

22.600	1.5207	0.37	Q	.	.	.	V .
22.617	1.5212	0.37	Q	.	.	.	V .
22.633	1.5218	0.37	Q	.	.	.	V .
22.650	1.5223	0.37	Q	.	.	.	V .
22.667	1.5228	0.37	Q	.	.	.	V .
22.683	1.5233	0.37	Q	.	.	.	V .
22.700	1.5238	0.37	Q	.	.	.	V .
22.717	1.5243	0.37	Q	.	.	.	V .
22.733	1.5248	0.37	Q	.	.	.	V .
22.750	1.5253	0.37	Q	.	.	.	V .
22.767	1.5258	0.37	Q	.	.	.	V .
22.783	1.5263	0.37	Q	.	.	.	V .
22.800	1.5268	0.37	Q	.	.	.	V.
22.817	1.5273	0.36	Q	.	.	.	V.
22.833	1.5278	0.36	Q	.	.	.	V.
22.850	1.5283	0.36	Q	.	.	.	V.
22.867	1.5288	0.36	Q	.	.	.	V.
22.883	1.5293	0.36	Q	.	.	.	V.
22.900	1.5298	0.36	Q	.	.	.	V.
22.917	1.5303	0.36	Q	.	.	.	V.
22.933	1.5308	0.36	Q	.	.	.	V.
22.950	1.5313	0.36	Q	.	.	.	V.
22.967	1.5318	0.36	Q	.	.	.	V.
22.983	1.5323	0.36	Q	.	.	.	V.
23.000	1.5328	0.36	Q	.	.	.	V.
23.017	1.5333	0.36	Q	.	.	.	V.
23.033	1.5338	0.36	Q	.	.	.	V.
23.050	1.5343	0.36	Q	.	.	.	V.
23.067	1.5348	0.36	Q	.	.	.	V.
23.083	1.5353	0.36	Q	.	.	.	V.
23.100	1.5358	0.36	Q	.	.	.	V.
23.117	1.5362	0.36	Q	.	.	.	V.
23.133	1.5367	0.36	Q	.	.	.	V.
23.150	1.5372	0.35	Q	.	.	.	V.
23.167	1.5377	0.35	Q	.	.	.	V.
23.183	1.5382	0.35	Q	.	.	.	V.
23.200	1.5387	0.35	Q	.	.	.	V.
23.217	1.5392	0.35	Q	.	.	.	V.
23.233	1.5397	0.35	Q	.	.	.	V.
23.250	1.5401	0.35	Q	.	.	.	V.
23.267	1.5406	0.35	Q	.	.	.	V.
23.283	1.5411	0.35	Q	.	.	.	V.
23.300	1.5416	0.35	Q	.	.	.	V.
23.317	1.5421	0.35	Q	.	.	.	V.
23.333	1.5426	0.35	Q	.	.	.	V.
23.350	1.5430	0.35	Q	.	.	.	V.
23.367	1.5435	0.35	Q	.	.	.	V.
23.383	1.5440	0.35	Q	.	.	.	V.
23.400	1.5445	0.35	Q	.	.	.	V.
23.417	1.5450	0.35	Q	.	.	.	V.
23.433	1.5454	0.35	Q	.	.	.	V.
23.450	1.5459	0.35	Q	.	.	.	V.
23.467	1.5464	0.35	Q	.	.	.	V.
23.483	1.5469	0.35	Q	.	.	.	V.
23.500	1.5473	0.35	Q	.	.	.	V.
23.517	1.5478	0.34	Q	.	.	.	V.
23.533	1.5483	0.34	Q	.	.	.	V.
23.550	1.5488	0.34	Q	.	.	.	V.
23.567	1.5492	0.34	Q	.	.	.	V.
23.583	1.5497	0.34	Q	.	.	.	V.
23.600	1.5502	0.34	Q	.	.	.	V.
23.617	1.5507	0.34	Q	.	.	.	V.
23.633	1.5511	0.34	Q	.	.	.	V.
23.650	1.5516	0.34	Q	.	.	.	V.
23.667	1.5521	0.34	Q	.	.	.	V.

```
  23.683      1.5525      0.34  Q          .          .          .         V.
  23.700      1.5530      0.34  Q          .          .          .         V.
  23.717      1.5535      0.34  Q          .          .          .         V.
  23.733      1.5539      0.34  Q          .          .          .         V.
  23.750      1.5544      0.34  Q          .          .          .         V.
  23.767      1.5549      0.34  Q          .          .          .         V.
  23.783      1.5553      0.34  Q          .          .          .         V.
  23.800      1.5558      0.34  Q          .          .          .         V.
  23.817      1.5563      0.34  Q          .          .          .         V.
  23.833      1.5567      0.34  Q          .          .          .         V.
  23.850      1.5572      0.34  Q          .          .          .         V.
  23.867      1.5577      0.34  Q          .          .          .         V.
  23.883      1.5581      0.34  Q          .          .          .         V.
  23.900      1.5586      0.34  Q          .          .          .         V.
  23.917      1.5590      0.33  Q          .          .          .         V.
  23.933      1.5595      0.33  Q          .          .          .         V.
  23.950      1.5600      0.33  Q          .          .          .         V.
  23.967      1.5604      0.33  Q          .          .          .         V.
  23.983      1.5609      0.33  Q          .          .          .         V.
  24.000      1.5613      0.33  Q          .          .          .         V.
  24.017      1.5618      0.33  Q          .          .          .         V.
  24.033      1.5623      0.33  Q          .          .          .         V.
  24.050      1.5627      0.33  Q          .          .          .         V.
  24.067      1.5632      0.33  Q          .          .          .         V.
  24.083      1.5636      0.33  Q          .          .          .         V.
  24.100      1.5641      0.33  Q          .          .          .         V.
  24.117      1.5645      0.31  Q          .          .          .         V.
  24.133      1.5649      0.26  Q          .          .          .         V.
  24.150      1.5651      0.21  Q          .          .          .         V.
  24.167      1.5654      0.16  Q          .          .          .         V.
  24.183      1.5655      0.11  Q          .          .          .         V.
  24.200      1.5656      0.06  Q          .          .          .         V.

****************************************************************************
  FLOW PROCESS FROM NODE   1123.00 TO NODE   1123.00 IS CODE =   6
----------------------------------------------------------------------------
  >>>>>STREAM NUMBER 1 CLEARED AND SET TO ZERO<<<<<
============================================================================
============================================================================

  END OF FLOODSCx ROUTING ANALYSIS
```

Technical Appendix D

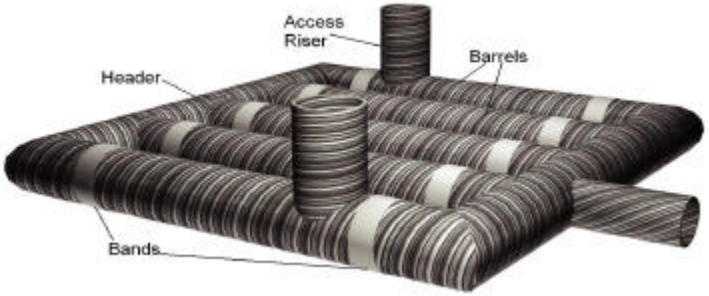
Underground Storage Analysis
Proposed Condition

DYODS™
Design Your Own Detention System

CONTECH
CMP DETENTION SYSTEMS

css_log...

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

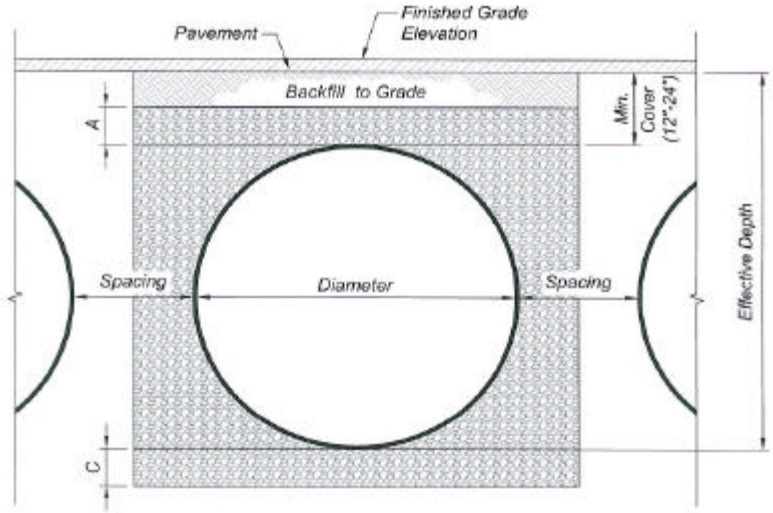


Project Summary

Date:	3/15/2018	
Project Name:	Residence at Casa Loma	
City / County:	Redlands	
State:	CA	
Designed By:		
Company:	DRC	**Enter Information in Blue Cells**
Telephone:		

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	21,500	
Limiting Width (ft):	25.00	
Invert Depth Below Asphalt (ft):	8.00	
Solid or Perforated Pipe:	Perforated	
Shape Or Diameter (in):	60	19.63 ft^2 Pipe Area
Number Of Headers:	0	
Spacing between Barrels (ft):	2.50	
Stone Width Around Perimeter of System (ft):	2.5	
Depth A: Porous Stone Above Pipe (in):	0	
Depth C: Porous Stone Below Pipe (in):	12	
Stone Porosity (0 to 40%):	40	



System Sizing

Pipe Storage:	13,195	cf	
Porous Stone Storage:	8,462	cf	
Total Storage Provided:	21,657	cf	100.7% Of Required Storage
Number of Barrels:	3	barrels	
Length per Barrel:	224.0	ft	
Length Per Header:	0.0	ft	
Rectangular Footprint (W x L):	25. ft x 229. ft		

CONTECH Materials

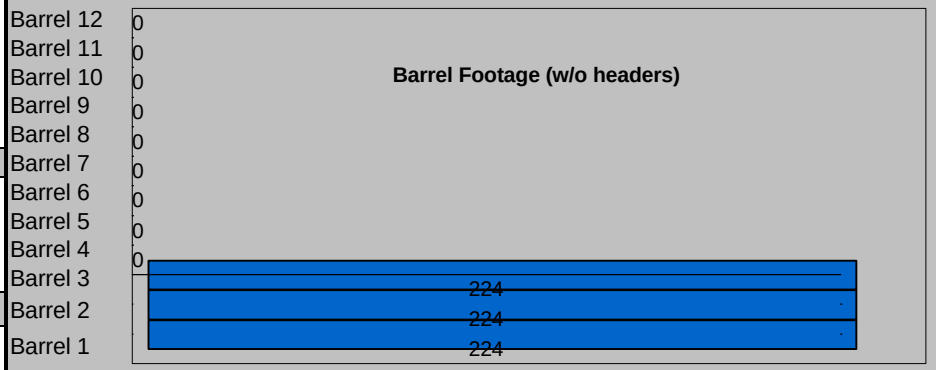
Total CMP Footage:	672	ft
Approximate Total Pieces:	30	pcs
Approximate Coupling Bands:	27	bands
Approximate Truckloads:	8	trucks

Construction Quantities**

Total Excavation:	1697	cy
Porous Stone Backfill For Storage:	784	cy stone
Backfill to Grade Excluding Stone:	425	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



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Residence at Casa Loma - Redlands
Underground Storage Analysis

Contech

CMP			
Invert (ft)	Diameter (in)	Length (ft)	Volume (cu ft)
23.50	60	672	13,195

Stone			
Below CMP (ft)	Above CMP (ft)	Porosity (%)	Volume (cu ft)
1.00	0.00	40	8,462

Footprint			
Width (ft)	Length (ft)	Area (sq ft)	Percolation (in / hr)
25	229	5,725	2.33

Outlet			
Invert (ft)	Diameter (in)	Number (#)	Area (sq in)
26.50	6.00	6	170

Rating Curve								
Stage		Storage				Discharge		
Elevation (ft)	Depth (ft)	CMP (cu ft)	Stone (cu ft)	Total (cu ft)	Total (ac-ft)	Percolation (cfs)	Outlet (cfs)	Total (cfs)
22.50	0.00	0	0	0	0.000	0.31	0.00	0.31
23.00	0.50	0	1,145	1,145	0.026	0.31	0.00	0.31
23.50	1.00	0	2,290	2,290	0.053	0.31	0.00	0.31
24.00	1.50	687	3,160	3,847	0.088	0.31	0.00	0.31
24.50	2.00	1,879	3,829	5,707	0.131	0.31	0.00	0.31
25.00	2.50	3,329	4,393	7,723	0.177	0.31	0.00	0.31
25.50	3.00	4,929	4,899	9,827	0.226	0.31	0.00	0.31
26.00	3.50	6,597	5,376	11,973	0.275	0.31	0.00	0.31
26.50	4.00	8,266	5,854	14,120	0.324	0.31	0.00	0.31
27.00	4.50	9,865	6,359	16,224	0.372	0.31	2.84	3.15
27.50	5.00	11,316	6,924	18,240	0.419	0.31	4.91	5.22
28.00	5.50	12,508	7,592	20,100	0.461	0.31	6.34	6.65
28.50	6.00	13,195	8,462	21,657	0.497	0.31	7.50	7.81

Outlet Discharge - Orifice Equation with C = 0.6, H = Water Surface Elevation - Centerline Elevation of Outlet

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   15MAR18  TIME  16:00:00  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                        *DIAGRAM
             1          ID        RESIDENCE AT CASA LOMA - REDLANDS
             2          ID        PROPOSED CONDITION
             3          ID        UNDERGROUND STORAGE ANALYSIS - 10-YEAR
 *** FREE ***
             4          IT       5       0       0     292
             5          IO       0       2
             6          IN       5

             7          KKSUB_AREA
             8          QI    0.00    0.08    0.21    0.21    0.21    0.21    0.21    0.21    0.21    0.21
             9          QI    0.21    0.21    0.21    0.21    0.21    0.21    0.21    0.21    0.22    0.22
            10          QI    0.22    0.22    0.22    0.22    0.22    0.22    0.22    0.22    0.22    0.22
            11          QI    0.22    0.22    0.23    0.23    0.23    0.23    0.23    0.23    0.23    0.23
            12          QI    0.23    0.23    0.23    0.23    0.24    0.24    0.24    0.24    0.24    0.24
            13          QI    0.24    0.24    0.24    0.24    0.25    0.25    0.25    0.25    0.25    0.25
            14          QI    0.25    0.25    0.25    0.25    0.26    0.26    0.26    0.26    0.26    0.26
            15          QI    0.26    0.26    0.26    0.27    0.27    0.27    0.27    0.27    0.27    0.27
            16          QI    0.28    0.28    0.28    0.28    0.28    0.28    0.28    0.29    0.29    0.29
            17          QI    0.29    0.29    0.29    0.29    0.30    0.30    0.30    0.30    0.30    0.31
            18          QI    0.31    0.31    0.31    0.31    0.31    0.32    0.32    0.32    0.32    0.32
            19          QI    0.33    0.33    0.33    0.33    0.34    0.34    0.34    0.34    0.35    0.35
            20          QI    0.35    0.35    0.36    0.36    0.36    0.37    0.37    0.37    0.37    0.38
            21          QI    0.38    0.38    0.39    0.39    0.39    0.40    0.40    0.41    0.41    0.42
            22          QI    0.42    0.43    0.43    0.43    0.44    0.44    0.47    0.49    0.49    0.50
            23          QI    0.51    0.51    0.52    0.53    0.53    0.54    0.55    0.56    0.57    0.57
            24          QI    0.58    0.59    0.60    0.61    0.62    0.63    0.65    0.66    0.67    0.69
            25          QI    0.71    0.74    0.76    0.77    0.80    0.82    0.83    0.87    0.89    0.92
            26          QI    0.96    0.99    1.03    1.09    1.13    1.24    1.36    1.44    1.60    1.75
            27          QI    1.91    2.35    2.94    4.56    8.86    4.49    1.91    1.53    1.28    1.12
            28          QI    1.02    0.94    0.88    0.83    0.79    0.75    0.71    0.67    0.64    0.62
            29          QI    0.60    0.58    0.56    0.55    0.53    0.52    0.51    0.49    0.46    0.44
            30          QI    0.43    0.42    0.41    0.40    0.39    0.39    0.38    0.37    0.37    0.36
            31          QI    0.36    0.35    0.35    0.34    0.34    0.33    0.33    0.32    0.32    0.31
            32          QI    0.31    0.31    0.30    0.30    0.30    0.29    0.29    0.29    0.28    0.28
            33          QI    0.28    0.27    0.27    0.27    0.27    0.26    0.26    0.26    0.26    0.26
            34          QI    0.25    0.25    0.25    0.25    0.24    0.24    0.24    0.24    0.24    0.24
            35          QI    0.23    0.23    0.23    0.23    0.23    0.23    0.22    0.22    0.22    0.22
            36          QI    0.22    0.22    0.22    0.21    0.21    0.21    0.21    0.21    0.21    0.20
            37          QI    0.06    0.00
            38          BA  0.0082

            39          KKUND_STOR
            40          RS       1    ELEV       0
            41          SV   0.000   0.026   0.053   0.088   0.131   0.177   0.226   0.275   0.324   0.372
            42          SV   0.419   0.461   0.497
            43          SQ    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.31    3.15
            44          SQ    5.22    6.65    7.81
            45          SE   22.50   23.00   23.50   24.00   24.50   25.00   25.50   26.00   26.50   27.00
            46          SE   27.50   28.00   28.50
            47          ZZ
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```
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     7    SUB_AREA
                V
                V
    39    UND_STOR

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
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1****************************************                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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*             VERSION 4.1               *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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*  RUN DATE   15MAR18  TIME  16:00:00   *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
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*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
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                              RESIDENCE AT CASA LOMA - REDLANDS
                              PROPOSED CONDITION
                              UNDERGROUND STORAGE ANALYSIS - 10-YEAR

   5 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           0  PRINT CONTROL
                       IPLOT           2  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         292  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        0015  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.25 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


             **************
             *            *
   7 KK      *  SUB_AREA  *
             *            *
             **************

   6 IN          TIME DATA FOR INPUT TIME SERIES
                        JXMIN           5  TIME INTERVAL IN MINUTES
                      JXDATE      1    0  STARTING DATE
                      JXTIME           0  STARTING TIME

               SUBBASIN RUNOFF DATA
```

38 BA SUBBASIN CHARACTERISTICS
TAREA .01 SUBBASIN AREA

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HYDROGRAPH AT STATION SUB_AREA

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0605	74	0.	1		1210	147	0.	1		1815	220	0.
1		0005	2	0.	1		0610	75	0.	1		1215	148	0.	1		1820	221	0.
1		0010	3	0.	1		0615	76	0.	1		1220	149	0.	1		1825	222	0.
1		0015	4	0.	1		0620	77	0.	1		1225	150	1.	1		1830	223	0.
1		0020	5	0.	1		0625	78	0.	1		1230	151	1.	1		1835	224	0.
1		0025	6	0.	1		0630	79	0.	1		1235	152	1.	1		1840	225	0.
1		0030	7	0.	1		0635	80	0.	1		1240	153	1.	1		1845	226	0.
1		0035	8	0.	1		0640	81	0.	1		1245	154	1.	1		1850	227	0.
1		0040	9	0.	1		0645	82	0.	1		1250	155	1.	1		1855	228	0.
1		0045	10	0.	1		0650	83	0.	1		1255	156	1.	1		1900	229	0.
1		0050	11	0.	1		0655	84	0.	1		1300	157	1.	1		1905	230	0.
1		0055	12	0.	1		0700	85	0.	1		1305	158	1.	1		1910	231	0.
1		0100	13	0.	1		0705	86	0.	1		1310	159	1.	1		1915	232	0.
1		0105	14	0.	1		0710	87	0.	1		1315	160	1.	1		1920	233	0.
1		0110	15	0.	1		0715	88	0.	1		1320	161	1.	1		1925	234	0.
1		0115	16	0.	1		0720	89	0.	1		1325	162	1.	1		1930	235	0.
1		0120	17	0.	1		0725	90	0.	1		1330	163	1.	1		1935	236	0.
1		0125	18	0.	1		0730	91	0.	1		1335	164	1.	1		1940	237	0.
1		0130	19	0.	1		0735	92	0.	1		1340	165	1.	1		1945	238	0.
1		0135	20	0.	1		0740	93	0.	1		1345	166	1.	1		1950	239	0.
1		0140	21	0.	1		0745	94	0.	1		1350	167	1.	1		1955	240	0.
1		0145	22	0.	1		0750	95	0.	1		1355	168	1.	1		2000	241	0.
1		0150	23	0.	1		0755	96	0.	1		1400	169	1.	1		2005	242	0.
1		0155	24	0.	1		0800	97	0.	1		1405	170	1.	1		2010	243	0.
1		0200	25	0.	1		0805	98	0.	1		1410	171	1.	1		2015	244	0.
1		0205	26	0.	1		0810	99	0.	1		1415	172	1.	1		2020	245	0.
1		0210	27	0.	1		0815	100	0.	1		1420	173	1.	1		2025	246	0.
1		0215	28	0.	1		0820	101	0.	1		1425	174	1.	1		2030	247	0.
1		0220	29	0.	1		0825	102	0.	1		1430	175	1.	1		2035	248	0.
1		0225	30	0.	1		0830	103	0.	1		1435	176	1.	1		2040	249	0.
1		0230	31	0.	1		0835	104	0.	1		1440	177	1.	1		2045	250	0.
1		0235	32	0.	1		0840	105	0.	1		1445	178	1.	1		2050	251	0.
1		0240	33	0.	1		0845	106	0.	1		1450	179	1.	1		2055	252	0.
1		0245	34	0.	1		0850	107	0.	1		1455	180	1.	1		2100	253	0.
1		0250	35	0.	1		0855	108	0.	1		1500	181	1.	1		2105	254	0.
1		0255	36	0.	1		0900	109	0.	1		1505	182	1.	1		2110	255	0.
1		0300	37	0.	1		0905	110	0.	1		1510	183	1.	1		2115	256	0.
1		0305	38	0.	1		0910	111	0.	1		1515	184	1.	1		2120	257	0.
1		0310	39	0.	1		0915	112	0.	1		1520	185	1.	1		2125	258	0.
1		0315	40	0.	1		0920	113	0.	1		1525	186	1.	1		2130	259	0.
1		0320	41	0.	1		0925	114	0.	1		1530	187	1.	1		2135	260	0.
1		0325	42	0.	1		0930	115	0.	1		1535	188	1.	1		2140	261	0.
1		0330	43	0.	1		0935	116	0.	1		1540	189	2.	1		2145	262	0.
1		0335	44	0.	1		0940	117	0.	1		1545	190	2.	1		2150	263	0.
1		0340	45	0.	1		0945	118	0.	1		1550	191	2.	1		2155	264	0.
1		0345	46	0.	1		0950	119	0.	1		1555	192	2.	1		2200	265	0.
1		0350	47	0.	1		0955	120	0.	1		1600	193	3.	1		2205	266	0.

1	0355	48	0.	*	1	1000	121	0.	*	1	1605	194	5.	*	1	2210	267	0.
1	0400	49	0.	*	1	1005	122	0.	*	1	1610	195	9.	*	1	2215	268	0.
1	0405	50	0.	*	1	1010	123	0.	*	1	1615	196	4.	*	1	2220	269	0.
1	0410	51	0.	*	1	1015	124	0.	*	1	1620	197	2.	*	1	2225	270	0.
1	0415	52	0.	*	1	1020	125	0.	*	1	1625	198	2.	*	1	2230	271	0.
1	0420	53	0.	*	1	1025	126	0.	*	1	1630	199	1.	*	1	2235	272	0.
1	0425	54	0.	*	1	1030	127	0.	*	1	1635	200	1.	*	1	2240	273	0.
1	0430	55	0.	*	1	1035	128	0.	*	1	1640	201	1.	*	1	2245	274	0.
1	0435	56	0.	*	1	1040	129	0.	*	1	1645	202	1.	*	1	2250	275	0.
1	0440	57	0.	*	1	1045	130	0.	*	1	1650	203	1.	*	1	2255	276	0.
1	0445	58	0.	*	1	1050	131	0.	*	1	1655	204	1.	*	1	2300	277	0.
1	0450	59	0.	*	1	1055	132	0.	*	1	1700	205	1.	*	1	2305	278	0.
1	0455	60	0.	*	1	1100	133	0.	*	1	1705	206	1.	*	1	2310	279	0.
1	0500	61	0.	*	1	1105	134	0.	*	1	1710	207	1.	*	1	2315	280	0.
1	0505	62	0.	*	1	1110	135	0.	*	1	1715	208	1.	*	1	2320	281	0.
1	0510	63	0.	*	1	1115	136	0.	*	1	1720	209	1.	*	1	2325	282	0.
1	0515	64	0.	*	1	1120	137	0.	*	1	1725	210	1.	*	1	2330	283	0.
1	0520	65	0.	*	1	1125	138	0.	*	1	1730	211	1.	*	1	2335	284	0.
1	0525	66	0.	*	1	1130	139	0.	*	1	1735	212	1.	*	1	2340	285	0.
1	0530	67	0.	*	1	1135	140	0.	*	1	1740	213	1.	*	1	2345	286	0.
1	0535	68	0.	*	1	1140	141	0.	*	1	1745	214	1.	*	1	2350	287	0.
1	0540	69	0.	*	1	1145	142	0.	*	1	1750	215	1.	*	1	2355	288	0.
1	0545	70	0.	*	1	1150	143	0.	*	1	1755	216	1.	*	2	0000	289	0.
1	0550	71	0.	*	1	1155	144	0.	*	1	1800	217	1.	*	2	0005	290	0.
1	0555	72	0.	*	1	1200	145	0.	*	1	1805	218	0.	*	2	0010	291	0.
1	0600	73	0.	*	1	1205	146	0.	*	1	1810	219	0.	*	2	0015	292	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.25-HR
+ (CFS)	(HR)					
		(CFS)				
+ 9.	16.17		1.	0.	0.	0.
		(INCHES)	1.220	2.187	2.191	2.191
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = .01 SQ MI

```
                    (O) OUTFLOW
         0.        1.        2.        3.        4.        5.        6.        7.        8.        9.        0.        0.        0.
DAHRMN PER
 10000   1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005   2.O        .         .         .         .         .         .         .         .         .         .         .         .
 10010   3. O       .         .         .         .         .         .         .         .         .         .         .         .
 10015   4. O       .         .         .         .         .         .         .         .         .         .         .         .
 10020   5. O       .         .         .         .         .         .         .         .         .         .         .         .
 10025   6. O       .         .         .         .         .         .         .         .         .         .         .         .
 10030   7. O       .         .         .         .         .         .         .         .         .         .         .         .
 10035   8. O       .         .         .         .         .         .         .         .         .         .         .         .
 10040   9. O       .         .         .         .         .         .         .         .         .         .         .         .
 10045  10. O       .         .         .         .         .         .         .         .         .         .         .         .
 10050  11. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  12. O       .         .         .         .         .         .         .         .         .         .         .         .
 10100  13. O       .         .         .         .         .         .         .         .         .         .         .         .
 10105  14. O       .         .         .         .         .         .         .         .         .         .         .         .
 10110  15. O       .         .         .         .         .         .         .         .         .         .         .         .
 10115  16. O       .         .         .         .         .         .         .         .         .         .         .         .
 10120  17. O       .         .         .         .         .         .         .         .         .         .         .         .
 10125  18. O       .         .         .         .         .         .         .         .         .         .         .         .
 10130  19. O       .         .         .         .         .         .         .         .         .         .         .         .
 10135  20. O       .         .         .         .         .         .         .         .         .         .         .         .
 10140  21. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10145  22. O       .         .         .         .         .         .         .         .         .         .         .         .
 10150  23. O       .         .         .         .         .         .         .         .         .         .         .         .
 10155  24. O       .         .         .         .         .         .         .         .         .         .         .         .
 10200  25. O       .         .         .         .         .         .         .         .         .         .         .         .
 10205  26. O       .         .         .         .         .         .         .         .         .         .         .         .
 10210  27. O       .         .         .         .         .         .         .         .         .         .         .         .
 10215  28. O       .         .         .         .         .         .         .         .         .         .         .         .
 10220  29. O       .         .         .         .         .         .         .         .         .         .         .         .
 10225  30. O       .         .         .         .         .         .         .         .         .         .         .         .
 10230  31. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32. O       .         .         .         .         .         .         .         .         .         .         .         .
 10240  33. O       .         .         .         .         .         .         .         .         .         .         .         .
 10245  34. O       .         .         .         .         .         .         .         .         .         .         .         .
 10250  35. O       .         .         .         .         .         .         .         .         .         .         .         .
 10255  36. O       .         .         .         .         .         .         .         .         .         .         .         .
 10300  37. O       .         .         .         .         .         .         .         .         .         .         .         .
 10305  38. O       .         .         .         .         .         .         .         .         .         .         .         .
 10310  39. O       .         .         .         .         .         .         .         .         .         .         .         .
 10315  40. O       .         .         .         .         .         .         .         .         .         .         .         .
 10320  41. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42. O       .         .         .         .         .         .         .         .         .         .         .         .
 10330  43. O       .         .         .         .         .         .         .         .         .         .         .         .
 10335  44. O       .         .         .         .         .         .         .         .         .         .         .         .
 10340  45. O       .         .         .         .         .         .         .         .         .         .         .         .
 10345  46. O       .         .         .         .         .         .         .         .         .         .         .         .
 10350  47. O       .         .         .         .         .         .         .         .         .         .         .         .
 10355  48. O       .         .         .         .         .         .         .         .         .         .         .         .
 10400  49. O       .         .         .         .         .         .         .         .         .         .         .         .
 10405  50. O       .         .         .         .         .         .         .         .         .         .         .         .
 10410  51. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52. O       .         .         .         .         .         .         .         .         .         .         .         .
 10420  53. O       .         .         .         .         .         .         .         .         .         .         .         .
 10425  54. O       .         .         .         .         .         .         .         .         .         .         .         .
 10430  55. O       .         .         .         .         .         .         .         .         .         .         .         .
 10435  56. O       .         .         .         .         .         .         .         .         .         .         .         .
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10440  57. O       .         .         .         .         .         .         .         .         .         .         .         .
10445  58. O       .         .         .         .         .         .         .         .         .         .         .         .
10450  59. O       .         .         .         .         .         .         .         .         .         .         .         .
10455  60. O       .         .         .         .         .         .         .         .         .         .         .         .
10500  61. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10505  62. O       .         .         .         .         .         .         .         .         .         .         .         .
10510  63. O       .         .         .         .         .         .         .         .         .         .         .         .
10515  64. O       .         .         .         .         .         .         .         .         .         .         .         .
10520  65.  O      .         .         .         .         .         .         .         .         .         .         .         .
10525  66.  O      .         .         .         .         .         .         .         .         .         .         .         .
10530  67.  O      .         .         .         .         .         .         .         .         .         .         .         .
10535  68.  O      .         .         .         .         .         .         .         .         .         .         .         .
10540  69.  O      .         .         .         .         .         .         .         .         .         .         .         .
10545  70.  O      .         .         .         .         .         .         .         .         .         .         .         .
10550  71. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10555  72.  O      .         .         .         .         .         .         .         .         .         .         .         .
10600  73.  O      .         .         .         .         .         .         .         .         .         .         .         .
10605  74.  O      .         .         .         .         .         .         .         .         .         .         .         .
10610  75.  O      .         .         .         .         .         .         .         .         .         .         .         .
10615  76.  O      .         .         .         .         .         .         .         .         .         .         .         .
10620  77.  O      .         .         .         .         .         .         .         .         .         .         .         .
10625  78.  O      .         .         .         .         .         .         .         .         .         .         .         .
10630  79.  O      .         .         .         .         .         .         .         .         .         .         .         .
10635  80.  O      .         .         .         .         .         .         .         .         .         .         .         .
10640  81. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10645  82.  O      .         .         .         .         .         .         .         .         .         .         .         .
10650  83.  O      .         .         .         .         .         .         .         .         .         .         .         .
10655  84.  O      .         .         .         .         .         .         .         .         .         .         .         .
10700  85.  O      .         .         .         .         .         .         .         .         .         .         .         .
10705  86.  O      .         .         .         .         .         .         .         .         .         .         .         .
10710  87.  O      .         .         .         .         .         .         .         .         .         .         .         .
10715  88.  O      .         .         .         .         .         .         .         .         .         .         .         .
10720  89.  O      .         .         .         .         .         .         .         .         .         .         .         .
10725  90.  O      .         .         .         .         .         .         .         .         .         .         .         .
10730  91. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735  92.  O      .         .         .         .         .         .         .         .         .         .         .         .
10740  93.  O      .         .         .         .         .         .         .         .         .         .         .         .
10745  94.  O      .         .         .         .         .         .         .         .         .         .         .         .
10750  95.  O      .         .         .         .         .         .         .         .         .         .         .         .
10755  96.  O      .         .         .         .         .         .         .         .         .         .         .         .
10800  97.  O      .         .         .         .         .         .         .         .         .         .         .         .
10805  98.  O      .         .         .         .         .         .         .         .         .         .         .         .
10810  99.  O      .         .         .         .         .         .         .         .         .         .         .         .
10815 100.  O      .         .         .         .         .         .         .         .         .         .         .         .
10820 101. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10825 102.  O      .         .         .         .         .         .         .         .         .         .         .         .
10830 103.  O      .         .         .         .         .         .         .         .         .         .         .         .
10835 104.  O      .         .         .         .         .         .         .         .         .         .         .         .
10840 105.  O      .         .         .         .         .         .         .         .         .         .         .         .
10845 106.  O      .         .         .         .         .         .         .         .         .         .         .         .
10850 107.  O      .         .         .         .         .         .         .         .         .         .         .         .
10855 108.  O      .         .         .         .         .         .         .         .         .         .         .         .
10900 109.  O      .         .         .         .         .         .         .         .         .         .         .         .
10905 110.  O      .         .         .         .         .         .         .         .         .         .         .         .
10910 111. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10915 112.  O      .         .         .         .         .         .         .         .         .         .         .         .
10920 113.  O      .         .         .         .         .         .         .         .         .         .         .         .
10925 114.  O      .         .         .         .         .         .         .         .         .         .         .         .
10930 115.  O      .         .         .         .         .         .         .         .         .         .         .         .
10935 116.  O      .         .         .         .         .         .         .         .         .         .         .         .
10940 117.  O      .         .         .         .         .         .         .         .         .         .         .         .
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10945 118.  O      .         .         .         .         .         .         .         .         .         .         .         .
10950 119.  O      .         .         .         .         .         .         .         .         .         .         .         .
10955 120.  O      .         .         .         .         .         .         .         .         .         .         .         .
11000 121. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122.  O      .         .         .         .         .         .         .         .         .         .         .         .
11010 123.   O     .         .         .         .         .         .         .         .         .         .         .         .
11015 124.   O     .         .         .         .         .         .         .         .         .         .         .         .
11020 125.   O     .         .         .         .         .         .         .         .         .         .         .         .
11025 126.   O     .         .         .         .         .         .         .         .         .         .         .         .
11030 127.   O     .         .         .         .         .         .         .         .         .         .         .         .
11035 128.   O     .         .         .         .         .         .         .         .         .         .         .         .
11040 129.   O     .         .         .         .         .         .         .         .         .         .         .         .
11045 130.   O     .         .         .         .         .         .         .         .         .         .         .         .
11050 131. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132.   O     .         .         .         .         .         .         .         .         .         .         .         .
11100 133.   O     .         .         .         .         .         .         .         .         .         .         .         .
11105 134.   O     .         .         .         .         .         .         .         .         .         .         .         .
11110 135.   O     .         .         .         .         .         .         .         .         .         .         .         .
11115 136.   O     .         .         .         .         .         .         .         .         .         .         .         .
11120 137.   O     .         .         .         .         .         .         .         .         .         .         .         .
11125 138.   O     .         .         .         .         .         .         .         .         .         .         .         .
11130 139.   O     .         .         .         .         .         .         .         .         .         .         .         .
11135 140.   O     .         .         .         .         .         .         .         .         .         .         .         .
11140 141. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142.   O     .         .         .         .         .         .         .         .         .         .         .         .
11150 143.   O     .         .         .         .         .         .         .         .         .         .         .         .
11155 144.   O     .         .         .         .         .         .         .         .         .         .         .         .
11200 145.   O     .         .         .         .         .         .         .         .         .         .         .         .
11205 146.   O     .         .         .         .         .         .         .         .         .         .         .         .
11210 147.    O    .         .         .         .         .         .         .         .         .         .         .         .
11215 148.    O    .         .         .         .         .         .         .         .         .         .         .         .
11220 149.    O    .         .         .         .         .         .         .         .         .         .         .         .
11225 150.    O    .         .         .         .         .         .         .         .         .         .         .         .
11230 151. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11235 152.    O    .         .         .         .         .         .         .         .         .         .         .         .
11240 153.    O    .         .         .         .         .         .         .         .         .         .         .         .
11245 154.    O    .         .         .         .         .         .         .         .         .         .         .         .
11250 155.    O    .         .         .         .         .         .         .         .         .         .         .         .
11255 156.    O    .         .         .         .         .         .         .         .         .         .         .         .
11300 157.     O   .         .         .         .         .         .         .         .         .         .         .         .
11305 158.     O   .         .         .         .         .         .         .         .         .         .         .         .
11310 159.     O   .         .         .         .         .         .         .         .         .         .         .         .
11315 160.     O   .         .         .         .         .         .         .         .         .         .         .         .
11320 161. . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11325 162.     O   .         .         .         .         .         .         .         .         .         .         .         .
11330 163.     O   .         .         .         .         .         .         .         .         .         .         .         .
11335 164.     O   .         .         .         .         .         .         .         .         .         .         .         .
11340 165.     O   .         .         .         .         .         .         .         .         .         .         .         .
11345 166.     O   .         .         .         .         .         .         .         .         .         .         .         .
11350 167.     O   .         .         .         .         .         .         .         .         .         .         .         .
11355 168.      O  .         .         .         .         .         .         .         .         .         .         .         .
11400 169.      O  .         .         .         .         .         .         .         .         .         .         .         .
11405 170.      O  .         .         .         .         .         .         .         .         .         .         .         .
11410 171. . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11415 172.      O  .         .         .         .         .         .         .         .         .         .         .         .
11420 173.       O .         .         .         .         .         .         .         .         .         .         .         .
11425 174.       O .         .         .         .         .         .         .         .         .         .         .         .
11430 175.       O .         .         .         .         .         .         .         .         .         .         .         .
11435 176.       O .         .         .         .         .         .         .         .         .         .         .         .
11440 177.       O .         .         .         .         .         .         .         .         .         .         .         .
11445 178.        O.         .         .         .         .         .         .         .         .         .         .         .
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11450 179.        O.        .        .        .        .        .        .        .        .        .        .
11455 180.        O.        .        .        .        .        .        .        .        .        .        .
11500 181. . . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.         O        .        .        .        .        .        .        .        .        .        .
11510 183.         O        .        .        .        .        .        .        .        .        .        .
11515 184.         .O       .        .        .        .        .        .        .        .        .        .
11520 185.         .O       .        .        .        .        .        .        .        .        .        .
11525 186.         . O      .        .        .        .        .        .        .        .        .        .
11530 187.         .   O    .        .        .        .        .        .        .        .        .        .
11535 188.         .   O    .        .        .        .        .        .        .        .        .        .
11540 189.         .     O  .        .        .        .        .        .        .        .        .        .
11545 190.         .      O .        .        .        .        .        .        .        .        .        .
11550 191. . . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.         .         .  O     .        .        .        .        .        .        .        .        .
11600 193.         .         .      O.        .        .        .        .        .        .        .        .
11605 194.         .         .        .        .    O   .        .        .        .        .        .        .
11610 195.         .         .        .        .        .        .        .        .       O.        .        .
11615 196.         .         .        .        .   O    .        .        .        .        .        .        .
11620 197.         .       O.         .        .        .        .        .        .        .        .        .
11625 198.         .    O    .        .        .        .        .        .        .        .        .        .
11630 199.         .  O      .        .        .        .        .        .        .        .        .        .
11635 200.         .O        .        .        .        .        .        .        .        .        .        .
11640 201. . . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.        O.        .        .        .        .        .        .        .        .        .        .
11650 203.        O.        .        .        .        .        .        .        .        .        .        .
11655 204.       O .        .        .        .        .        .        .        .        .        .        .
11700 205.       O .        .        .        .        .        .        .        .        .        .        .
11705 206.      O  .        .        .        .        .        .        .        .        .        .        .
11710 207.      O  .        .        .        .        .        .        .        .        .        .        .
11715 208.      O  .        .        .        .        .        .        .        .        .        .        .
11720 209.     O   .        .        .        .        .        .        .        .        .        .        .
11725 210.     O   .        .        .        .        .        .        .        .        .        .        .
11730 211. . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.     O   .        .        .        .        .        .        .        .        .        .        .
11740 213.     O   .        .        .        .        .        .        .        .        .        .        .
11745 214.     O   .        .        .        .        .        .        .        .        .        .        .
11750 215.    O    .        .        .        .        .        .        .        .        .        .        .
11755 216.    O    .        .        .        .        .        .        .        .        .        .        .
11800 217.    O    .        .        .        .        .        .        .        .        .        .        .
11805 218.    O    .        .        .        .        .        .        .        .        .        .        .
11810 219.    O    .        .        .        .        .        .        .        .        .        .        .
11815 220.   O     .        .        .        .        .        .        .        .        .        .        .
11820 221. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.   O     .        .        .        .        .        .        .        .        .        .        .
11830 223.   O     .        .        .        .        .        .        .        .        .        .        .
11835 224.   O     .        .        .        .        .        .        .        .        .        .        .
11840 225.   O     .        .        .        .        .        .        .        .        .        .        .
11845 226.   O     .        .        .        .        .        .        .        .        .        .        .
11850 227.   O     .        .        .        .        .        .        .        .        .        .        .
11855 228.   O     .        .        .        .        .        .        .        .        .        .        .
11900 229.   O     .        .        .        .        .        .        .        .        .        .        .
11905 230.   O     .        .        .        .        .        .        .        .        .        .        .
11910 231. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.  O      .        .        .        .        .        .        .        .        .        .        .
11920 233.  O      .        .        .        .        .        .        .        .        .        .        .
11925 234.  O      .        .        .        .        .        .        .        .        .        .        .
11930 235.  O      .        .        .        .        .        .        .        .        .        .        .
11935 236.  O      .        .        .        .        .        .        .        .        .        .        .
11940 237.  O      .        .        .        .        .        .        .        .        .        .        .
11945 238.  O      .        .        .        .        .        .        .        .        .        .        .
11950 239.  O      .        .        .        .        .        .        .        .        .        .        .
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11955 240.  O      .         .         .         .         .         .         .         .         .         .         .         .
12000 241. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242.  O      .         .         .         .         .         .         .         .         .         .         .         .
12010 243.  O      .         .         .         .         .         .         .         .         .         .         .         .
12015 244.  O      .         .         .         .         .         .         .         .         .         .         .         .
12020 245.  O      .         .         .         .         .         .         .         .         .         .         .         .
12025 246.  O      .         .         .         .         .         .         .         .         .         .         .         .
12030 247.  O      .         .         .         .         .         .         .         .         .         .         .         .
12035 248.  O      .         .         .         .         .         .         .         .         .         .         .         .
12040 249.  O      .         .         .         .         .         .         .         .         .         .         .         .
12045 250.  O      .         .         .         .         .         .         .         .         .         .         .         .
12050 251. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252.  O      .         .         .         .         .         .         .         .         .         .         .         .
12100 253.  O      .         .         .         .         .         .         .         .         .         .         .         .
12105 254.  O      .         .         .         .         .         .         .         .         .         .         .         .
12110 255.  O      .         .         .         .         .         .         .         .         .         .         .         .
12115 256.  O      .         .         .         .         .         .         .         .         .         .         .         .
12120 257.  O      .         .         .         .         .         .         .         .         .         .         .         .
12125 258.  O      .         .         .         .         .         .         .         .         .         .         .         .
12130 259.  O      .         .         .         .         .         .         .         .         .         .         .         .
12135 260.  O      .         .         .         .         .         .         .         .         .         .         .         .
12140 261. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262. O       .         .         .         .         .         .         .         .         .         .         .         .
12150 263. O       .         .         .         .         .         .         .         .         .         .         .         .
12155 264. O       .         .         .         .         .         .         .         .         .         .         .         .
12200 265. O       .         .         .         .         .         .         .         .         .         .         .         .
12205 266. O       .         .         .         .         .         .         .         .         .         .         .         .
12210 267. O       .         .         .         .         .         .         .         .         .         .         .         .
12215 268. O       .         .         .         .         .         .         .         .         .         .         .         .
12220 269. O       .         .         .         .         .         .         .         .         .         .         .         .
12225 270. O       .         .         .         .         .         .         .         .         .         .         .         .
12230 271. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272. O       .         .         .         .         .         .         .         .         .         .         .         .
12240 273. O       .         .         .         .         .         .         .         .         .         .         .         .
12245 274. O       .         .         .         .         .         .         .         .         .         .         .         .
12250 275. O       .         .         .         .         .         .         .         .         .         .         .         .
12255 276. O       .         .         .         .         .         .         .         .         .         .         .         .
12300 277. O       .         .         .         .         .         .         .         .         .         .         .         .
12305 278. O       .         .         .         .         .         .         .         .         .         .         .         .
12310 279. O       .         .         .         .         .         .         .         .         .         .         .         .
12315 280. O       .         .         .         .         .         .         .         .         .         .         .         .
12320 281. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282. O       .         .         .         .         .         .         .         .         .         .         .         .
12330 283. O       .         .         .         .         .         .         .         .         .         .         .         .
12335 284. O       .         .         .         .         .         .         .         .         .         .         .         .
12340 285. O       .         .         .         .         .         .         .         .         .         .         .         .
12345 286. O       .         .         .         .         .         .         .         .         .         .         .         .
12350 287. O       .         .         .         .         .         .         .         .         .         .         .         .
12355 288. O       .         .         .         .         .         .         .         .         .         .         .         .
20000 289. O       .         .         .         .         .         .         .         .         .         .         .         .
20005 290. O       .         .         .         .         .         .         .         .         .         .         .         .
20010 291.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
20015 292.O--------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
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            *            *
 39 KK      *  UND_STOR  *
            *            *
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               HYDROGRAPH ROUTING DATA

 40 RS           STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC         .00  INITIAL CONDITION
                          X         .00 WORKING R AND D COEFFICIENT

 41 SV             STORAGE          .0        .0        .1        .1        .1        .2        .2        .3        .3        .4
                                    .4        .5        .5

 43 SQ           DISCHARGE          0.        0.        0.        0.        0.        0.        0.        0.        0.        3.
                                    5.        7.        8.

 45 SE           ELEVATION       22.50     23.00     23.50     24.00     24.50     25.00     25.50     26.00     26.50     27.00
                                 27.50     28.00     28.50
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HYDROGRAPH AT STATION UND_STOR

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	22.5	1		0810	99	0.	.0	22.5	1		1620	197	0.	.3	26.5
1		0005	2	0.	.0	22.5	1		0815	100	0.	.0	22.5	1		1625	198	1.	.3	26.6
1		0010	3	0.	.0	22.5	1		0820	101	0.	.0	22.5	1		1630	199	1.	.3	26.6
1		0015	4	0.	.0	22.5	1		0825	102	0.	.0	22.5	1		1635	200	1.	.3	26.6
1		0020	5	0.	.0	22.5	1		0830	103	0.	.0	22.5	1		1640	201	1.	.3	26.6
1		0025	6	0.	.0	22.5	1		0835	104	0.	.0	22.5	1		1645	202	1.	.3	26.6
1		0030	7	0.	.0	22.5	1		0840	105	0.	.0	22.5	1		1650	203	1.	.3	26.6
1		0035	8	0.	.0	22.5	1		0845	106	0.	.0	22.5	1		1655	204	1.	.3	26.6
1		0040	9	0.	.0	22.5	1		0850	107	0.	.0	22.5	1		1700	205	1.	.3	26.6
1		0045	10	0.	.0	22.5	1		0855	108	0.	.0	22.5	1		1705	206	1.	.3	26.6
1		0050	11	0.	.0	22.5	1		0900	109	0.	.0	22.5	1		1710	207	1.	.3	26.6
1		0055	12	0.	.0	22.5	1		0905	110	0.	.0	22.5	1		1715	208	1.	.3	26.6
1		0100	13	0.	.0	22.5	1		0910	111	0.	.0	22.5	1		1720	209	1.	.3	26.6
1		0105	14	0.	.0	22.5	1		0915	112	0.	.0	22.5	1		1725	210	1.	.3	26.6
1		0110	15	0.	.0	22.5	1		0920	113	0.	.0	22.5	1		1730	211	1.	.3	26.6
1		0115	16	0.	.0	22.5	1		0925	114	0.	.0	22.5	1		1735	212	1.	.3	26.6
1		0120	17	0.	.0	22.5	1		0930	115	0.	.0	22.5	1		1740	213	1.	.3	26.6
1		0125	18	0.	.0	22.5	1		0935	116	0.	.0	22.5	1		1745	214	1.	.3	26.6
1		0130	19	0.	.0	22.5	1		0940	117	0.	.0	22.5	1		1750	215	1.	.3	26.5
1		0135	20	0.	.0	22.5	1		0945	118	0.	.0	22.5	1		1755	216	1.	.3	26.5
1		0140	21	0.	.0	22.5	1		0950	119	0.	.0	22.5	1		1800	217	1.	.3	26.5

1	0145	22	0.	.0	22.5	*	1	0955	120	0.	.0	22.5	*	1	1805	218	1.	.3	26.5
1	0150	23	0.	.0	22.5	*	1	1000	121	0.	.0	22.5	*	1	1810	219	1.	.3	26.5
1	0155	24	0.	.0	22.5	*	1	1005	122	0.	.0	22.5	*	1	1815	220	0.	.3	26.5
1	0200	25	0.	.0	22.5	*	1	1010	123	0.	.0	22.5	*	1	1820	221	0.	.3	26.5
1	0205	26	0.	.0	22.5	*	1	1015	124	0.	.0	22.5	*	1	1825	222	0.	.3	26.5
1	0210	27	0.	.0	22.5	*	1	1020	125	0.	.0	22.6	*	1	1830	223	0.	.3	26.5
1	0215	28	0.	.0	22.5	*	1	1025	126	0.	.0	22.6	*	1	1835	224	0.	.3	26.5
1	0220	29	0.	.0	22.5	*	1	1030	127	0.	.0	22.6	*	1	1840	225	0.	.3	26.5
1	0225	30	0.	.0	22.5	*	1	1035	128	0.	.0	22.6	*	1	1845	226	0.	.3	26.5
1	0230	31	0.	.0	22.5	*	1	1040	129	0.	.0	22.6	*	1	1850	227	0.	.3	26.5
1	0235	32	0.	.0	22.5	*	1	1045	130	0.	.0	22.6	*	1	1855	228	0.	.3	26.5
1	0240	33	0.	.0	22.5	*	1	1050	131	0.	.0	22.6	*	1	1900	229	0.	.3	26.5
1	0245	34	0.	.0	22.5	*	1	1055	132	0.	.0	22.6	*	1	1905	230	0.	.3	26.5
1	0250	35	0.	.0	22.5	*	1	1100	133	0.	.0	22.6	*	1	1910	231	0.	.3	26.5
1	0255	36	0.	.0	22.5	*	1	1105	134	0.	.0	22.6	*	1	1915	232	0.	.3	26.5
1	0300	37	0.	.0	22.5	*	1	1110	135	0.	.0	22.6	*	1	1920	233	0.	.3	26.5
1	0305	38	0.	.0	22.5	*	1	1115	136	0.	.0	22.7	*	1	1925	234	0.	.3	26.5
1	0310	39	0.	.0	22.5	*	1	1120	137	0.	.0	22.7	*	1	1930	235	0.	.3	26.5
1	0315	40	0.	.0	22.5	*	1	1125	138	0.	.0	22.7	*	1	1935	236	0.	.3	26.5
1	0320	41	0.	.0	22.5	*	1	1130	139	0.	.0	22.7	*	1	1940	237	0.	.3	26.5
1	0325	42	0.	.0	22.5	*	1	1135	140	0.	.0	22.7	*	1	1945	238	0.	.3	26.5
1	0330	43	0.	.0	22.5	*	1	1140	141	0.	.0	22.7	*	1	1950	239	0.	.3	26.5
1	0335	44	0.	.0	22.5	*	1	1145	142	0.	.0	22.7	*	1	1955	240	0.	.3	26.5
1	0340	45	0.	.0	22.5	*	1	1150	143	0.	.0	22.7	*	1	2000	241	0.	.3	26.5
1	0345	46	0.	.0	22.5	*	1	1155	144	0.	.0	22.8	*	1	2005	242	0.	.3	26.5
1	0350	47	0.	.0	22.5	*	1	1200	145	0.	.0	22.8	*	1	2010	243	0.	.3	26.5
1	0355	48	0.	.0	22.5	*	1	1205	146	0.	.0	22.8	*	1	2015	244	0.	.3	26.5
1	0400	49	0.	.0	22.5	*	1	1210	147	0.	.0	22.8	*	1	2020	245	0.	.3	26.5
1	0405	50	0.	.0	22.5	*	1	1215	148	0.	.0	22.8	*	1	2025	246	0.	.3	26.5
1	0410	51	0.	.0	22.5	*	1	1220	149	0.	.0	22.9	*	1	2030	247	0.	.3	26.5
1	0415	52	0.	.0	22.5	*	1	1225	150	0.	.0	22.9	*	1	2035	248	0.	.3	26.5
1	0420	53	0.	.0	22.5	*	1	1230	151	0.	.0	22.9	*	1	2040	249	0.	.3	26.5
1	0425	54	0.	.0	22.5	*	1	1235	152	0.	.0	22.9	*	1	2045	250	0.	.3	26.5
1	0430	55	0.	.0	22.5	*	1	1240	153	0.	.0	23.0	*	1	2050	251	0.	.3	26.5
1	0435	56	0.	.0	22.5	*	1	1245	154	0.	.0	23.0	*	1	2055	252	0.	.3	26.5
1	0440	57	0.	.0	22.5	*	1	1250	155	0.	.0	23.0	*	1	2100	253	0.	.3	26.5
1	0445	58	0.	.0	22.5	*	1	1255	156	0.	.0	23.1	*	1	2105	254	0.	.3	26.5
1	0450	59	0.	.0	22.5	*	1	1300	157	0.	.0	23.1	*	1	2110	255	0.	.3	26.5
1	0455	60	0.	.0	22.5	*	1	1305	158	0.	.0	23.1	*	1	2115	256	0.	.3	26.5
1	0500	61	0.	.0	22.5	*	1	1310	159	0.	.0	23.1	*	1	2120	257	0.	.3	26.5
1	0505	62	0.	.0	22.5	*	1	1315	160	0.	.0	23.2	*	1	2125	258	0.	.3	26.5
1	0510	63	0.	.0	22.5	*	1	1320	161	0.	.0	23.2	*	1	2130	259	0.	.3	26.5
1	0515	64	0.	.0	22.5	*	1	1325	162	0.	.0	23.2	*	1	2135	260	0.	.3	26.5
1	0520	65	0.	.0	22.5	*	1	1330	163	0.	.0	23.3	*	1	2140	261	0.	.3	26.5
1	0525	66	0.	.0	22.5	*	1	1335	164	0.	.0	23.3	*	1	2145	262	0.	.3	26.5
1	0530	67	0.	.0	22.5	*	1	1340	165	0.	.0	23.4	*	1	2150	263	0.	.3	26.4
1	0535	68	0.	.0	22.5	*	1	1345	166	0.	.0	23.4	*	1	2155	264	0.	.3	26.4
1	0540	69	0.	.0	22.5	*	1	1350	167	0.	.0	23.4	*	1	2200	265	0.	.3	26.4
1	0545	70	0.	.0	22.5	*	1	1355	168	0.	.1	23.5	*	1	2205	266	0.	.3	26.4
1	0550	71	0.	.0	22.5	*	1	1400	169	0.	.1	23.5	*	1	2210	267	0.	.3	26.4
1	0555	72	0.	.0	22.5	*	1	1405	170	0.	.1	23.6	*	1	2215	268	0.	.3	26.4
1	0600	73	0.	.0	22.5	*	1	1410	171	0.	.1	23.6	*	1	2220	269	0.	.3	26.4
1	0605	74	0.	.0	22.5	*	1	1415	172	0.	.1	23.6	*	1	2225	270	0.	.3	26.4
1	0610	75	0.	.0	22.5	*	1	1420	173	0.	.1	23.7	*	1	2230	271	0.	.3	26.4
1	0615	76	0.	.0	22.5	*	1	1425	174	0.	.1	23.7	*	1	2235	272	0.	.3	26.4
1	0620	77	0.	.0	22.5	*	1	1430	175	0.	.1	23.8	*	1	2240	273	0.	.3	26.4
1	0625	78	0.	.0	22.5	*	1	1435	176	0.	.1	23.8	*	1	2245	274	0.	.3	26.4
1	0630	79	0.	.0	22.5	*	1	1440	177	0.	.1	23.9	*	1	2250	275	0.	.3	26.4
1	0635	80	0.	.0	22.5	*	1	1445	178	0.	.1	23.9	*	1	2255	276	0.	.3	26.4
1	0640	81	0.	.0	22.5	*	1	1450	179	0.	.1	24.0	*	1	2300	277	0.	.3	26.4
1	0645	82	0.	.0	22.5	*	1	1455	180	0.	.1	24.0	*	1	2305	278	0.	.3	26.4

1	0650	83	0.	.0	22.5	*	1	1500	181	0.	.1	24.1	*	1	2310	279	0.	.3	26.4
1	0655	84	0.	.0	22.5	*	1	1505	182	0.	.1	24.1	*	1	2315	280	0.	.3	26.4
1	0700	85	0.	.0	22.5	*	1	1510	183	0.	.1	24.2	*	1	2320	281	0.	.3	26.4
1	0705	86	0.	.0	22.5	*	1	1515	184	0.	.1	24.3	*	1	2325	282	0.	.3	26.3
1	0710	87	0.	.0	22.5	*	1	1520	185	0.	.1	24.3	*	1	2330	283	0.	.3	26.3
1	0715	88	0.	.0	22.5	*	1	1525	186	0.	.1	24.4	*	1	2335	284	0.	.3	26.3
1	0720	89	0.	.0	22.5	*	1	1530	187	0.	.1	24.5	*	1	2340	285	0.	.3	26.3
1	0725	90	0.	.0	22.5	*	1	1535	188	0.	.1	24.6	*	1	2345	286	0.	.3	26.3
1	0730	91	0.	.0	22.5	*	1	1540	189	0.	.1	24.6	*	1	2350	287	0.	.3	26.3
1	0735	92	0.	.0	22.5	*	1	1545	190	0.	.2	24.7	*	1	2355	288	0.	.3	26.3
1	0740	93	0.	.0	22.5	*	1	1550	191	0.	.2	24.9	*	2	0000	289	0.	.3	26.3
1	0745	94	0.	.0	22.5	*	1	1555	192	0.	.2	25.0	*	2	0005	290	0.	.3	26.3
1	0750	95	0.	.0	22.5	*	1	1600	193	0.	.2	25.2	*	2	0010	291	0.	.3	26.3
1	0755	96	0.	.0	22.5	*	1	1605	194	0.	.2	25.4	*	2	0015	292	0.	.3	26.3
1	0800	97	0.	.0	22.5	*	1	1610	195	0.	.3	25.9	*						
1	0805	98	0.	.0	22.5	*	1	1615	196	0.	.3	26.3	*						
						*							*						

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  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.25-HR
+   (CFS)       (HR)
                          (CFS)
+       1.     16.58                 0.          0.          0.           0.
                         (INCHES)      .537       1.591       1.606        1.606
                          (AC-FT)        0.          1.          1.           1.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.25-HR
+  (AC-FT)      (HR)
       0.     16.58                 0.          0.          0.           0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.25-HR
+   (FEET)      (HR)
     26.63     16.67                26.52       24.06       24.04        24.04

                         CUMULATIVE AREA =     .01 SQ MI
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STATION UND_STOR

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                        (I) INFLOW,   (O) OUTFLOW
          0.        1.        2.        3.        4.        5.        6.        7.        8.        9.        0.        0.        0.
                                                                                   (S) STORAGE
          .0        .0        .0        .0        .0        .0       -.1        .0        .1        .2        .3        .4        .0
DAHRMN PER
 10000   1I--O------.---------.---------.---------.---------.---------.---------S---------.---------.---------.---------.---------.
 10005   2.I O      .         .         .         .         .         .         S         .         .         .         .         .
 10010   3. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10015   4. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10020   5. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10025   6. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10030   7. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10035   8. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10040   9. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10045  10. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10050  11. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  12. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10100  13. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10105  14. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10110  15. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10115  16. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10120  17. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10125  18. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10130  19. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10135  20. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10140  21. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10145  22. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10150  23. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10155  24. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10200  25. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10205  26. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10210  27. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10215  28. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10220  29. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10225  30. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10230  31. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10240  33. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10245  34. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10250  35. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10255  36. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10300  37. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10305  38. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10310  39. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10315  40. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10320  41. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10330  43. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10335  44. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10340  45. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10345  46. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10350  47. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10355  48. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10400  49. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10405  50. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10410  51. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10420  53. IO      .         .         .         .         .         .         S         .         .         .         .         .
 10425  54. IO      .         .         .         .         .         .         S         .         .         .         .         .
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10430  55. IO      .         .         .         .         .         .         S         .         .         .         .         .
10435  56. IO      .         .         .         .         .         .         S         .         .         .         .         .
10440  57. IO      .         .         .         .         .         .         S         .         .         .         .         .
10445  58. IO      .         .         .         .         .         .         S         .         .         .         .         .
10450  59. IO      .         .         .         .         .         .         S         .         .         .         .         .
10455  60. IO      .         .         .         .         .         .         S         .         .         .         .         .
10500  61. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10505  62. IO      .         .         .         .         .         .         S         .         .         .         .         .
10510  63. IO      .         .         .         .         .         .         S         .         .         .         .         .
10515  64. IO      .         .         .         .         .         .         S         .         .         .         .         .
10520  65.  I      .         .         .         .         .         .         S         .         .         .         .         .
10525  66.  I      .         .         .         .         .         .         S         .         .         .         .         .
10530  67.  I      .         .         .         .         .         .         S         .         .         .         .         .
10535  68.  I      .         .         .         .         .         .         S         .         .         .         .         .
10540  69.  I      .         .         .         .         .         .         S         .         .         .         .         .
10545  70.  I      .         .         .         .         .         .         S         .         .         .         .         .
10550  71. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10555  72.  I      .         .         .         .         .         .         S         .         .         .         .         .
10600  73.  I      .         .         .         .         .         .         S         .         .         .         .         .
10605  74.  I      .         .         .         .         .         .         S         .         .         .         .         .
10610  75.  I      .         .         .         .         .         .         S         .         .         .         .         .
10615  76.  I      .         .         .         .         .         .         S         .         .         .         .         .
10620  77.  I      .         .         .         .         .         .         S         .         .         .         .         .
10625  78.  I      .         .         .         .         .         .         S         .         .         .         .         .
10630  79.  I      .         .         .         .         .         .         S         .         .         .         .         .
10635  80.  I      .         .         .         .         .         .         S         .         .         .         .         .
10640  81. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10645  82.  I      .         .         .         .         .         .         S         .         .         .         .         .
10650  83.  I      .         .         .         .         .         .         S         .         .         .         .         .
10655  84.  I      .         .         .         .         .         .         S         .         .         .         .         .
10700  85.  I      .         .         .         .         .         .         S         .         .         .         .         .
10705  86.  I      .         .         .         .         .         .         S         .         .         .         .         .
10710  87.  I      .         .         .         .         .         .         S         .         .         .         .         .
10715  88.  I      .         .         .         .         .         .         S         .         .         .         .         .
10720  89.  I      .         .         .         .         .         .         S         .         .         .         .         .
10725  90.  I      .         .         .         .         .         .         S         .         .         .         .         .
10730  91. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735  92.  I      .         .         .         .         .         .         S         .         .         .         .         .
10740  93.  I      .         .         .         .         .         .         S         .         .         .         .         .
10745  94.  I      .         .         .         .         .         .         S         .         .         .         .         .
10750  95.  I      .         .         .         .         .         .         S         .         .         .         .         .
10755  96.  I      .         .         .         .         .         .         S         .         .         .         .         .
10800  97.  I      .         .         .         .         .         .         S         .         .         .         .         .
10805  98.  I      .         .         .         .         .         .         S         .         .         .         .         .
10810  99.  I      .         .         .         .         .         .         S         .         .         .         .         .
10815 100.  I      .         .         .         .         .         .         S         .         .         .         .         .
10820 101. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10825 102.  I      .         .         .         .         .         .         S         .         .         .         .         .
10830 103.  I      .         .         .         .         .         .         S         .         .         .         .         .
10835 104.  I      .         .         .         .         .         .         S         .         .         .         .         .
10840 105.  I      .         .         .         .         .         .         S         .         .         .         .         .
10845 106.  I      .         .         .         .         .         .         S         .         .         .         .         .
10850 107.  I      .         .         .         .         .         .         S         .         .         .         .         .
10855 108.  I      .         .         .         .         .         .         S         .         .         .         .         .
10900 109.  I      .         .         .         .         .         .         S         .         .         .         .         .
10905 110.  I      .         .         .         .         .         .         S         .         .         .         .         .
10910 111. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10915 112.  I      .         .         .         .         .         .         S         .         .         .         .         .
10920 113.  I      .         .         .         .         .         .         S         .         .         .         .         .
10925 114.  I      .         .         .         .         .         .         S         .         .         .         .         .
10930 115.  I      .         .         .         .         .         .         S         .         .         .         .         .
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10935 116.  I      .         .         .         .         .         .         S         .         .         .         .         .
10940 117.  I      .         .         .         .         .         .         S         .         .         .         .         .
10945 118.  I      .         .         .         .         .         .         S         .         .         .         .         .
10950 119.  I      .         .         .         .         .         .         S         .         .         .         .         .
10955 120.  I      .         .         .         .         .         .         S         .         .         .         .         .
11000 121. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122.  I      .         .         .         .         .         .         S         .         .         .         .         .
11010 123.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11015 124.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11020 125.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11025 126.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11030 127.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11035 128.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11040 129.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11045 130.  OI     .         .         .         .         .         .         S         .         .         .         .         .
11050 131. .OI . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11100 133.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11105 134.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11110 135.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11115 136.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11120 137.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11125 138.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11130 139.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11135 140.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11140 141. .OI . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11150 143.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11155 144.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11200 145.  OI     .         .         .         .         .         .         .S        .         .         .         .         .
11205 146.  OI     .         .         .         .         .         .         . S       .         .         .         .         .
11210 147.  O I    .         .         .         .         .         .         . S       .         .         .         .         .
11215 148.  O I    .         .         .         .         .         .         . S       .         .         .         .         .
11220 149.  O I    .         .         .         .         .         .         . S       .         .         .         .         .
11225 150.  O I    .         .         .         .         .         .         . S       .         .         .         .         .
11230 151. .O.I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . .
11235 152.  O I    .         .         .         .         .         .         . S       .         .         .         .         .
11240 153.  O I    .         .         .         .         .         .         . S       .         .         .         .         .
11245 154.  O I    .         .         .         .         .         .         .  S      .         .         .         .         .
11250 155.  O I    .         .         .         .         .         .         .  S      .         .         .         .         .
11255 156.  O I    .         .         .         .         .         .         .  S      .         .         .         .         .
11300 157.  O  I   .         .         .         .         .         .         .  S      .         .         .         .         .
11305 158.  O  I   .         .         .         .         .         .         .  S      .         .         .         .         .
11310 159.  O  I   .         .         .         .         .         .         .  S      .         .         .         .         .
11315 160.  O  I   .         .         .         .         .         .         .   S     .         .         .         .         .
11320 161. .O. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  S . . . . . . . . . . . . . . . . . . . . . . . . . . .
11325 162.  O  I   .         .         .         .         .         .         .   S     .         .         .         .         .
11330 163.  O  I   .         .         .         .         .         .         .   S     .         .         .         .         .
11335 164.  O  I   .         .         .         .         .         .         .   S     .         .         .         .         .
11340 165.  O  I   .         .         .         .         .         .         .    S    .         .         .         .         .
11345 166.  O  I   .         .         .         .         .         .         .    S    .         .         .         .         .
11350 167.  O  I   .         .         .         .         .         .         .    S    .         .         .         .         .
11355 168.  O   I  .         .         .         .         .         .         .    S    .         .         .         .         .
11400 169.  O   I  .         .         .         .         .         .         .    S    .         .         .         .         .
11405 170.  O   I  .         .         .         .         .         .         .     S   .         .         .         .         .
11410 171. .O. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .     S . . . . . . . . . . . . . . . . . . . . . . . . . . .
11415 172.  O   I  .         .         .         .         .         .         .     S   .         .         .         .         .
11420 173.  O    I .         .         .         .         .         .         .      S  .         .         .         .         .
11425 174.  O    I .         .         .         .         .         .         .      S  .         .         .         .         .
11430 175.  O    I .         .         .         .         .         .         .      S  .         .         .         .         .
11435 176.  O    I .         .         .         .         .         .         .       S .         .         .         .         .
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11440 177.  O    I .         .         .         .         .         .         .      S .         .         .         .         .
11445 178.  O     I.         .         .         .         .         .         .      S .         .         .         .         .
11450 179.  O     I.         .         .         .         .         .         .       S.         .         .         .         .
11455 180.  O     I.         .         .         .         .         .         .       S.         .         .         .         .
11500 181. .O. . . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.  O      I         .         .         .         .         .         .        S         .         .         .         .
11510 183.  O      I         .         .         .         .         .         .        S         .         .         .         .
11515 184.  O      .I        .         .         .         .         .         .        .S        .         .         .         .
11520 185.  O      .I        .         .         .         .         .         .         . S      .         .         .         .
11525 186.  O      . I       .         .         .         .         .         .         . S      .         .         .         .
11530 187.  O      .   I     .         .         .         .         .         .         .  S     .         .         .         .
11535 188.  O      .   I     .         .         .         .         .         .         .   S    .         .         .         .
11540 189.  O      .     I   .         .         .         .         .         .         .   S    .         .         .         .
11545 190.  O      .      I  .         .         .         .         .         .         .    S   .         .         .         .
11550 191. .O. . . . . . . .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.  O      .         .  I      .         .         .         .         .         .      S .         .         .         .
11600 193.  O      .         .       I.         .         .         .         .         .       S.         .         .         .
11605 194.  O      .         .         .         .    I    .         .         .         .        . S       .         .         .
11610 195.  O      .         .         .         .         .         .         .         .       I.    S   .         .         .
11615 196.  O      .         .         .         .   I     .         .         .         .         .        S         .         .
11620 197.  O      .         I.        .         .         .         .         .         .         .         . S       .         .
11625 198.       O .    I    .         .         .         .         .         .         .         .         .  S      .         .
11630 199.         O  I      .         .         .         .         .         .         .         .         .   S     .         .
11635 200.         .I        .         .         .         .         .         .         .         .         .   S     .         .
11640 201. . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.        IO         .         .         .         .         .         .         .         .         .   S     .         .
11650 203.        IO         .         .         .         .         .         .         .         .         .   S     .         .
11655 204.       IO.         .         .         .         .         .         .         .         .         . S      .         .
11700 205.       IO.         .         .         .         .         .         .         .         .         . S      .         .
11705 206.      I O.         .         .         .         .         .         .         .         .         . S      .         .
11710 207.      IO .         .         .         .         .         .         .         .         .         . S      .         .
11715 208.      IO .         .         .         .         .         .         .         .         .         . S      .         .
11720 209.     IO  .         .         .         .         .         .         .         .         .         . S      .         .
11725 210.     IO  .         .         .         .         .         .         .         .         .         . S      .         .
11730 211. . . IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.     I   .         .         .         .         .         .         .         .         .         . S      .         .
11740 213.     I   .         .         .         .         .         .         .         .         .         . S      .         .
11745 214.     I   .         .         .         .         .         .         .         .         .         . S      .         .
11750 215.    IO   .         .         .         .         .         .         .         .         .         . S      .         .
11755 216.    IO   .         .         .         .         .         .         .         .         .         . S      .         .
11800 217.    I    .         .         .         .         .         .         .         .         .         . S      .         .
11805 218.    I    .         .         .         .         .         .         .         .         .         . S      .         .
11810 219.    I    .         .         .         .         .         .         .         .         .         . S      .         .
11815 220.   IO    .         .         .         .         .         .         .         .         .         . S      .         .
11820 221. . IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.   IO    .         .         .         .         .         .         .         .         .         . S      .         .
11830 223.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11835 224.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11840 225.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11845 226.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11850 227.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11855 228.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11900 229.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11905 230.   I     .         .         .         .         .         .         .         .         .         . S      .         .
11910 231. . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.  IO     .         .         .         .         .         .         .         .         .         . S      .         .
11920 233.  IO     .         .         .         .         .         .         .         .         .         . S      .         .
11925 234.  IO     .         .         .         .         .         .         .         .         .         . S      .         .
11930 235.  IO     .         .         .         .         .         .         .         .         .         . S      .         .
11935 236.  I      .         .         .         .         .         .         .         .         .         . S      .         .
11940 237.  I      .         .         .         .         .         .         .         .         .         . S      .         .
```

```
11945 238.  I      .         .         .         .         .         .         .         .         .         . S       .         .
11950 239.  I      .         .         .         .         .         .         .         .         .         . S       .         .
11955 240.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12000 241. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . .
12005 242.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12010 243.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12015 244.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12020 245.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12025 246.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12030 247.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12035 248.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12040 249.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12045 250.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12050 251. .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . .
12055 252.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12100 253.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12105 254.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12110 255.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12115 256.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12120 257.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12125 258.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12130 259.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12135 260.  I      .         .         .         .         .         .         .         .         .         . S       .         .
12140 261. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . .
12145 262. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12150 263. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12155 264. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12200 265. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12205 266. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12210 267. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12215 268. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12220 269. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12225 270. IO      .         .         .         .         .         .         .         .         .         . S       .         .
12230 271. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . .
12235 272. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12240 273. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12245 274. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12250 275. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12255 276. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12300 277. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12305 278. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12310 279. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12315 280. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12320 281. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . .
12325 282. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12330 283. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12335 284. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12340 285. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12345 286. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12350 287. IO      .         .         .         .         .         .         .         .         .         .S        .         .
12355 288. IO      .         .         .         .         .         .         .         .         .         S         .         .
20000 289. IO      .         .         .         .         .         .         .         .         .         S         .         .
20005 290. IO      .         .         .         .         .         .         .         .         .         S         .         .
20010 291.I.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . .
20015 292.I-O------.---------.---------.---------.---------.---------.---------.---------.---------.---------S---------.---------.
```

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB_AREA	9.	16.17	1.	0.	0.	.01		
+	ROUTED TO	UND_STOR	1.	16.58	0.	0.	0.	.01		
+									26.63	16.67

*** NORMAL END OF HEC-1 ***

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   15MAR18  TIME  16:00:00  *
 *                                      *
 ****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
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```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                        *DIAGRAM
             1          ID        RESIDENCE AT CASA LOMA - REDLANDS
             2          ID        PROPOSED CONDITION
             3          ID        UNDERGROUND STORAGE ANALYSIS - 25-YEAR
 *** FREE ***
             4          IT       5       0       0     292
             5          IO       0       2
             6          IN       5

             7          KKSUB_AREA
             8          QI    0.00    0.07    0.25    0.25    0.25    0.25    0.25    0.25    0.25    0.26
             9          QI    0.26    0.26    0.26    0.26    0.26    0.26    0.26    0.26    0.26    0.26
            10          QI    0.26    0.27    0.27    0.27    0.27    0.27    0.27    0.27    0.27    0.27
            11          QI    0.27    0.27    0.28    0.28    0.28    0.28    0.28    0.28    0.28    0.28
            12          QI    0.28    0.28    0.29    0.29    0.29    0.29    0.29    0.29    0.29    0.29
            13          QI    0.29    0.30    0.30    0.30    0.30    0.30    0.30    0.30    0.30    0.31
            14          QI    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.32    0.32    0.32
            15          QI    0.32    0.32    0.32    0.33    0.33    0.33    0.33    0.33    0.33    0.33
            16          QI    0.34    0.34    0.34    0.34    0.34    0.34    0.35    0.35    0.35    0.35
            17          QI    0.35    0.36    0.36    0.36    0.36    0.36    0.37    0.37    0.37    0.37
            18          QI    0.38    0.38    0.38    0.38    0.38    0.39    0.39    0.39    0.39    0.40
            19          QI    0.40    0.40    0.41    0.41    0.41    0.41    0.42    0.42    0.42    0.43
            20          QI    0.43    0.43    0.44    0.44    0.44    0.45    0.45    0.45    0.46    0.46
            21          QI    0.47    0.47    0.47    0.48    0.48    0.49    0.49    0.50    0.50    0.51
            22          QI    0.51    0.52    0.53    0.53    0.54    0.55    0.57    0.59    0.60    0.61
            23          QI    0.62    0.63    0.63    0.64    0.65    0.66    0.67    0.68    0.69    0.70
            24          QI    0.71    0.72    0.73    0.75    0.76    0.77    0.79    0.81    0.82    0.84
            25          QI    0.87    0.89    0.92    0.93    0.96    0.99    1.01    1.05    1.08    1.11
            26          QI    1.16    1.21    1.25    1.33    1.38    1.51    1.69    1.79    1.98    2.18
            27          QI    2.37    3.01    3.80    5.88   11.18    5.43    2.37    1.88    1.54    1.36
            28          QI    1.24    1.14    1.07    1.00    0.95    0.90    0.85    0.81    0.78    0.75
            29          QI    0.73    0.71    0.68    0.67    0.65    0.63    0.62    0.60    0.57    0.53
            30          QI    0.52    0.51    0.50    0.49    0.48    0.47    0.46    0.46    0.45    0.44
            31          QI    0.43    0.43    0.42    0.42    0.41    0.40    0.40    0.39    0.39    0.38
            32          QI    0.38    0.37    0.37    0.37    0.36    0.36    0.35    0.35    0.35    0.34
            33          QI    0.34    0.34    0.33    0.33    0.33    0.32    0.32    0.32    0.31    0.31
            34          QI    0.31    0.31    0.30    0.30    0.30    0.30    0.29    0.29    0.29    0.29
            35          QI    0.29    0.28    0.28    0.28    0.28    0.28    0.27    0.27    0.27    0.27
            36          QI    0.27    0.26    0.26    0.26    0.26    0.26    0.26    0.25    0.25    0.23
            37          QI    0.05    0.00
            38          BA  0.0082

            39          KKUND_STOR
            40          RS       1    ELEV       0
            41          SV   0.000   0.026   0.053   0.088   0.131   0.177   0.226   0.275   0.324   0.372
            42          SV   0.419   0.461   0.497
            43          SQ    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.31    3.15
            44          SQ    5.22    6.65    7.81
            45          SE   22.50   23.00   23.50   24.00   24.50   25.00   25.50   26.00   26.50   27.00
            46          SE   27.50   28.00   28.50
            47          ZZ
```

```
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     7    SUB_AREA
                V
                V
    39    UND_STOR

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
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1****************************************                                                
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38 BA SUBBASIN CHARACTERISTICS
TAREA .01 SUBBASIN AREA

***

HYDROGRAPH AT STATION SUB_AREA

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0605	74	0.	1		1210	147	1.	1		1815	220	1.
1		0005	2	0.	1		0610	75	0.	1		1215	148	1.	1		1820	221	1.
1		0010	3	0.	1		0615	76	0.	1		1220	149	1.	1		1825	222	1.
1		0015	4	0.	1		0620	77	0.	1		1225	150	1.	1		1830	223	1.
1		0020	5	0.	1		0625	78	0.	1		1230	151	1.	1		1835	224	0.
1		0025	6	0.	1		0630	79	0.	1		1235	152	1.	1		1840	225	0.
1		0030	7	0.	1		0635	80	0.	1		1240	153	1.	1		1845	226	0.
1		0035	8	0.	1		0640	81	0.	1		1245	154	1.	1		1850	227	0.
1		0040	9	0.	1		0645	82	0.	1		1250	155	1.	1		1855	228	0.
1		0045	10	0.	1		0650	83	0.	1		1255	156	1.	1		1900	229	0.
1		0050	11	0.	1		0655	84	0.	1		1300	157	1.	1		1905	230	0.
1		0055	12	0.	1		0700	85	0.	1		1305	158	1.	1		1910	231	0.
1		0100	13	0.	1		0705	86	0.	1		1310	159	1.	1		1915	232	0.
1		0105	14	0.	1		0710	87	0.	1		1315	160	1.	1		1920	233	0.
1		0110	15	0.	1		0715	88	0.	1		1320	161	1.	1		1925	234	0.
1		0115	16	0.	1		0720	89	0.	1		1325	162	1.	1		1930	235	0.
1		0120	17	0.	1		0725	90	0.	1		1330	163	1.	1		1935	236	0.
1		0125	18	0.	1		0730	91	0.	1		1335	164	1.	1		1940	237	0.
1		0130	19	0.	1		0735	92	0.	1		1340	165	1.	1		1945	238	0.
1		0135	20	0.	1		0740	93	0.	1		1345	166	1.	1		1950	239	0.
1		0140	21	0.	1		0745	94	0.	1		1350	167	1.	1		1955	240	0.
1		0145	22	0.	1		0750	95	0.	1		1355	168	1.	1		2000	241	0.
1		0150	23	0.	1		0755	96	0.	1		1400	169	1.	1		2005	242	0.
1		0155	24	0.	1		0800	97	0.	1		1405	170	1.	1		2010	243	0.
1		0200	25	0.	1		0805	98	0.	1		1410	171	1.	1		2015	244	0.
1		0205	26	0.	1		0810	99	0.	1		1415	172	1.	1		2020	245	0.
1		0210	27	0.	1		0815	100	0.	1		1420	173	1.	1		2025	246	0.
1		0215	28	0.	1		0820	101	0.	1		1425	174	1.	1		2030	247	0.
1		0220	29	0.	1		0825	102	0.	1		1430	175	1.	1		2035	248	0.
1		0225	30	0.	1		0830	103	0.	1		1435	176	1.	1		2040	249	0.
1		0230	31	0.	1		0835	104	0.	1		1440	177	1.	1		2045	250	0.
1		0235	32	0.	1		0840	105	0.	1		1445	178	1.	1		2050	251	0.
1		0240	33	0.	1		0845	106	0.	1		1450	179	1.	1		2055	252	0.
1		0245	34	0.	1		0850	107	0.	1		1455	180	1.	1		2100	253	0.
1		0250	35	0.	1		0855	108	0.	1		1500	181	1.	1		2105	254	0.
1		0255	36	0.	1		0900	109	0.	1		1505	182	1.	1		2110	255	0.
1		0300	37	0.	1		0905	110	0.	1		1510	183	1.	1		2115	256	0.
1		0305	38	0.	1		0910	111	0.	1		1515	184	1.	1		2120	257	0.
1		0310	39	0.	1		0915	112	0.	1		1520	185	1.	1		2125	258	0.
1		0315	40	0.	1		0920	113	0.	1		1525	186	2.	1		2130	259	0.
1		0320	41	0.	1		0925	114	0.	1		1530	187	2.	1		2135	260	0.
1		0325	42	0.	1		0930	115	0.	1		1535	188	2.	1		2140	261	0.
1		0330	43	0.	1		0935	116	0.	1		1540	189	2.	1		2145	262	0.
1		0335	44	0.	1		0940	117	0.	1		1545	190	2.	1		2150	263	0.
1		0340	45	0.	1		0945	118	0.	1		1550	191	2.	1		2155	264	0.
1		0345	46	0.	1		0950	119	0.	1		1555	192	3.	1		2200	265	0.
1		0350	47	0.	1		0955	120	0.	1		1600	193	4.	1		2205	266	0.

1	0355	48	0.	*	1	1000	121	0.	*	1	1605	194	6.	*	1	2210	267	0.
1	0400	49	0.	*	1	1005	122	0.	*	1	1610	195	11.	*	1	2215	268	0.
1	0405	50	0.	*	1	1010	123	0.	*	1	1615	196	5.	*	1	2220	269	0.
1	0410	51	0.	*	1	1015	124	0.	*	1	1620	197	2.	*	1	2225	270	0.
1	0415	52	0.	*	1	1020	125	0.	*	1	1625	198	2.	*	1	2230	271	0.
1	0420	53	0.	*	1	1025	126	0.	*	1	1630	199	2.	*	1	2235	272	0.
1	0425	54	0.	*	1	1030	127	0.	*	1	1635	200	1.	*	1	2240	273	0.
1	0430	55	0.	*	1	1035	128	0.	*	1	1640	201	1.	*	1	2245	274	0.
1	0435	56	0.	*	1	1040	129	0.	*	1	1645	202	1.	*	1	2250	275	0.
1	0440	57	0.	*	1	1045	130	0.	*	1	1650	203	1.	*	1	2255	276	0.
1	0445	58	0.	*	1	1050	131	0.	*	1	1655	204	1.	*	1	2300	277	0.
1	0450	59	0.	*	1	1055	132	0.	*	1	1700	205	1.	*	1	2305	278	0.
1	0455	60	0.	*	1	1100	133	0.	*	1	1705	206	1.	*	1	2310	279	0.
1	0500	61	0.	*	1	1105	134	0.	*	1	1710	207	1.	*	1	2315	280	0.
1	0505	62	0.	*	1	1110	135	0.	*	1	1715	208	1.	*	1	2320	281	0.
1	0510	63	0.	*	1	1115	136	0.	*	1	1720	209	1.	*	1	2325	282	0.
1	0515	64	0.	*	1	1120	137	0.	*	1	1725	210	1.	*	1	2330	283	0.
1	0520	65	0.	*	1	1125	138	1.	*	1	1730	211	1.	*	1	2335	284	0.
1	0525	66	0.	*	1	1130	139	1.	*	1	1735	212	1.	*	1	2340	285	0.
1	0530	67	0.	*	1	1135	140	1.	*	1	1740	213	1.	*	1	2345	286	0.
1	0535	68	0.	*	1	1140	141	1.	*	1	1745	214	1.	*	1	2350	287	0.
1	0540	69	0.	*	1	1145	142	1.	*	1	1750	215	1.	*	1	2355	288	0.
1	0545	70	0.	*	1	1150	143	1.	*	1	1755	216	1.	*	2	0000	289	0.
1	0550	71	0.	*	1	1155	144	1.	*	1	1800	217	1.	*	2	0005	290	0.
1	0555	72	0.	*	1	1200	145	1.	*	1	1805	218	1.	*	2	0010	291	0.
1	0600	73	0.	*	1	1205	146	1.	*	1	1810	219	1.	*	2	0015	292	0.
				*					*					*				

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.25-HR
+ (CFS)	(HR)					
		(CFS)				
+ 11.	16.17		1.	1.	1.	1.
		(INCHES)	1.504	2.685	2.688	2.688
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = .01 SQ MI

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                    (O) OUTFLOW
          0.        2.        4.        6.        8.       10.       12.        0.        0.        0.        0.        0.        0.
DAHRMN PER
 10000   1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005   2O         .         .         .         .         .         .         .         .         .         .         .         .
 10010   3.O        .         .         .         .         .         .         .         .         .         .         .         .
 10015   4.O        .         .         .         .         .         .         .         .         .         .         .         .
 10020   5.O        .         .         .         .         .         .         .         .         .         .         .         .
 10025   6.O        .         .         .         .         .         .         .         .         .         .         .         .
 10030   7.O        .         .         .         .         .         .         .         .         .         .         .         .
 10035   8.O        .         .         .         .         .         .         .         .         .         .         .         .
 10040   9.O        .         .         .         .         .         .         .         .         .         .         .         .
 10045  10.O        .         .         .         .         .         .         .         .         .         .         .         .
 10050  11.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  12.O        .         .         .         .         .         .         .         .         .         .         .         .
 10100  13.O        .         .         .         .         .         .         .         .         .         .         .         .
 10105  14.O        .         .         .         .         .         .         .         .         .         .         .         .
 10110  15.O        .         .         .         .         .         .         .         .         .         .         .         .
 10115  16.O        .         .         .         .         .         .         .         .         .         .         .         .
 10120  17.O        .         .         .         .         .         .         .         .         .         .         .         .
 10125  18.O        .         .         .         .         .         .         .         .         .         .         .         .
 10130  19.O        .         .         .         .         .         .         .         .         .         .         .         .
 10135  20.O        .         .         .         .         .         .         .         .         .         .         .         .
 10140  21.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10145  22.O        .         .         .         .         .         .         .         .         .         .         .         .
 10150  23.O        .         .         .         .         .         .         .         .         .         .         .         .
 10155  24.O        .         .         .         .         .         .         .         .         .         .         .         .
 10200  25.O        .         .         .         .         .         .         .         .         .         .         .         .
 10205  26.O        .         .         .         .         .         .         .         .         .         .         .         .
 10210  27.O        .         .         .         .         .         .         .         .         .         .         .         .
 10215  28.O        .         .         .         .         .         .         .         .         .         .         .         .
 10220  29.O        .         .         .         .         .         .         .         .         .         .         .         .
 10225  30.O        .         .         .         .         .         .         .         .         .         .         .         .
 10230  31.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32.O        .         .         .         .         .         .         .         .         .         .         .         .
 10240  33.O        .         .         .         .         .         .         .         .         .         .         .         .
 10245  34.O        .         .         .         .         .         .         .         .         .         .         .         .
 10250  35.O        .         .         .         .         .         .         .         .         .         .         .         .
 10255  36.O        .         .         .         .         .         .         .         .         .         .         .         .
 10300  37.O        .         .         .         .         .         .         .         .         .         .         .         .
 10305  38.O        .         .         .         .         .         .         .         .         .         .         .         .
 10310  39.O        .         .         .         .         .         .         .         .         .         .         .         .
 10315  40.O        .         .         .         .         .         .         .         .         .         .         .         .
 10320  41.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42.O        .         .         .         .         .         .         .         .         .         .         .         .
 10330  43.O        .         .         .         .         .         .         .         .         .         .         .         .
 10335  44.O        .         .         .         .         .         .         .         .         .         .         .         .
 10340  45.O        .         .         .         .         .         .         .         .         .         .         .         .
 10345  46.O        .         .         .         .         .         .         .         .         .         .         .         .
 10350  47.O        .         .         .         .         .         .         .         .         .         .         .         .
 10355  48.O        .         .         .         .         .         .         .         .         .         .         .         .
 10400  49.O        .         .         .         .         .         .         .         .         .         .         .         .
 10405  50.O        .         .         .         .         .         .         .         .         .         .         .         .
 10410  51.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52. O       .         .         .         .         .         .         .         .         .         .         .         .
 10420  53. O       .         .         .         .         .         .         .         .         .         .         .         .
 10425  54. O       .         .         .         .         .         .         .         .         .         .         .         .
 10430  55. O       .         .         .         .         .         .         .         .         .         .         .         .
 10435  56. O       .         .         .         .         .         .         .         .         .         .         .         .
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10440  57. O       .         .         .         .         .         .         .         .         .         .         .         .
10445  58. O       .         .         .         .         .         .         .         .         .         .         .         .
10450  59. O       .         .         .         .         .         .         .         .         .         .         .         .
10455  60. O       .         .         .         .         .         .         .         .         .         .         .         .
10500  61. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10505  62. O       .         .         .         .         .         .         .         .         .         .         .         .
10510  63. O       .         .         .         .         .         .         .         .         .         .         .         .
10515  64. O       .         .         .         .         .         .         .         .         .         .         .         .
10520  65. O       .         .         .         .         .         .         .         .         .         .         .         .
10525  66. O       .         .         .         .         .         .         .         .         .         .         .         .
10530  67. O       .         .         .         .         .         .         .         .         .         .         .         .
10535  68. O       .         .         .         .         .         .         .         .         .         .         .         .
10540  69. O       .         .         .         .         .         .         .         .         .         .         .         .
10545  70. O       .         .         .         .         .         .         .         .         .         .         .         .
10550  71. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10555  72. O       .         .         .         .         .         .         .         .         .         .         .         .
10600  73. O       .         .         .         .         .         .         .         .         .         .         .         .
10605  74. O       .         .         .         .         .         .         .         .         .         .         .         .
10610  75. O       .         .         .         .         .         .         .         .         .         .         .         .
10615  76. O       .         .         .         .         .         .         .         .         .         .         .         .
10620  77. O       .         .         .         .         .         .         .         .         .         .         .         .
10625  78. O       .         .         .         .         .         .         .         .         .         .         .         .
10630  79. O       .         .         .         .         .         .         .         .         .         .         .         .
10635  80. O       .         .         .         .         .         .         .         .         .         .         .         .
10640  81. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10645  82. O       .         .         .         .         .         .         .         .         .         .         .         .
10650  83. O       .         .         .         .         .         .         .         .         .         .         .         .
10655  84. O       .         .         .         .         .         .         .         .         .         .         .         .
10700  85. O       .         .         .         .         .         .         .         .         .         .         .         .
10705  86. O       .         .         .         .         .         .         .         .         .         .         .         .
10710  87. O       .         .         .         .         .         .         .         .         .         .         .         .
10715  88. O       .         .         .         .         .         .         .         .         .         .         .         .
10720  89. O       .         .         .         .         .         .         .         .         .         .         .         .
10725  90. O       .         .         .         .         .         .         .         .         .         .         .         .
10730  91. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735  92. O       .         .         .         .         .         .         .         .         .         .         .         .
10740  93. O       .         .         .         .         .         .         .         .         .         .         .         .
10745  94. O       .         .         .         .         .         .         .         .         .         .         .         .
10750  95. O       .         .         .         .         .         .         .         .         .         .         .         .
10755  96. O       .         .         .         .         .         .         .         .         .         .         .         .
10800  97. O       .         .         .         .         .         .         .         .         .         .         .         .
10805  98. O       .         .         .         .         .         .         .         .         .         .         .         .
10810  99. O       .         .         .         .         .         .         .         .         .         .         .         .
10815 100. O       .         .         .         .         .         .         .         .         .         .         .         .
10820 101. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10825 102. O       .         .         .         .         .         .         .         .         .         .         .         .
10830 103. O       .         .         .         .         .         .         .         .         .         .         .         .
10835 104. O       .         .         .         .         .         .         .         .         .         .         .         .
10840 105. O       .         .         .         .         .         .         .         .         .         .         .         .
10845 106. O       .         .         .         .         .         .         .         .         .         .         .         .
10850 107. O       .         .         .         .         .         .         .         .         .         .         .         .
10855 108. O       .         .         .         .         .         .         .         .         .         .         .         .
10900 109. O       .         .         .         .         .         .         .         .         .         .         .         .
10905 110. O       .         .         .         .         .         .         .         .         .         .         .         .
10910 111. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10915 112. O       .         .         .         .         .         .         .         .         .         .         .         .
10920 113. O       .         .         .         .         .         .         .         .         .         .         .         .
10925 114. O       .         .         .         .         .         .         .         .         .         .         .         .
10930 115. O       .         .         .         .         .         .         .         .         .         .         .         .
10935 116. O       .         .         .         .         .         .         .         .         .         .         .         .
10940 117. O       .         .         .         .         .         .         .         .         .         .         .         .
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10945 118. O       .         .         .         .         .         .         .         .         .         .         .         .
10950 119. O       .         .         .         .         .         .         .         .         .         .         .         .
10955 120. O       .         .         .         .         .         .         .         .         .         .         .         .
11000 121. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122. O       .         .         .         .         .         .         .         .         .         .         .         .
11010 123. O       .         .         .         .         .         .         .         .         .         .         .         .
11015 124. O       .         .         .         .         .         .         .         .         .         .         .         .
11020 125. O       .         .         .         .         .         .         .         .         .         .         .         .
11025 126. O       .         .         .         .         .         .         .         .         .         .         .         .
11030 127. O       .         .         .         .         .         .         .         .         .         .         .         .
11035 128. O       .         .         .         .         .         .         .         .         .         .         .         .
11040 129. O       .         .         .         .         .         .         .         .         .         .         .         .
11045 130. O       .         .         .         .         .         .         .         .         .         .         .         .
11050 131. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132. O       .         .         .         .         .         .         .         .         .         .         .         .
11100 133. O       .         .         .         .         .         .         .         .         .         .         .         .
11105 134. O       .         .         .         .         .         .         .         .         .         .         .         .
11110 135. O       .         .         .         .         .         .         .         .         .         .         .         .
11115 136. O       .         .         .         .         .         .         .         .         .         .         .         .
11120 137. O       .         .         .         .         .         .         .         .         .         .         .         .
11125 138. O       .         .         .         .         .         .         .         .         .         .         .         .
11130 139. O       .         .         .         .         .         .         .         .         .         .         .         .
11135 140.  O      .         .         .         .         .         .         .         .         .         .         .         .
11140 141. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142.  O      .         .         .         .         .         .         .         .         .         .         .         .
11150 143.  O      .         .         .         .         .         .         .         .         .         .         .         .
11155 144.  O      .         .         .         .         .         .         .         .         .         .         .         .
11200 145.  O      .         .         .         .         .         .         .         .         .         .         .         .
11205 146.  O      .         .         .         .         .         .         .         .         .         .         .         .
11210 147.  O      .         .         .         .         .         .         .         .         .         .         .         .
11215 148.  O      .         .         .         .         .         .         .         .         .         .         .         .
11220 149.  O      .         .         .         .         .         .         .         .         .         .         .         .
11225 150.  O      .         .         .         .         .         .         .         .         .         .         .         .
11230 151. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11235 152.  O      .         .         .         .         .         .         .         .         .         .         .         .
11240 153.  O      .         .         .         .         .         .         .         .         .         .         .         .
11245 154.  O      .         .         .         .         .         .         .         .         .         .         .         .
11250 155.  O      .         .         .         .         .         .         .         .         .         .         .         .
11255 156.  O      .         .         .         .         .         .         .         .         .         .         .         .
11300 157.  O      .         .         .         .         .         .         .         .         .         .         .         .
11305 158.  O      .         .         .         .         .         .         .         .         .         .         .         .
11310 159.  O      .         .         .         .         .         .         .         .         .         .         .         .
11315 160.  O      .         .         .         .         .         .         .         .         .         .         .         .
11320 161. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11325 162.   O     .         .         .         .         .         .         .         .         .         .         .         .
11330 163.   O     .         .         .         .         .         .         .         .         .         .         .         .
11335 164.   O     .         .         .         .         .         .         .         .         .         .         .         .
11340 165.   O     .         .         .         .         .         .         .         .         .         .         .         .
11345 166.   O     .         .         .         .         .         .         .         .         .         .         .         .
11350 167.   O     .         .         .         .         .         .         .         .         .         .         .         .
11355 168.   O     .         .         .         .         .         .         .         .         .         .         .         .
11400 169.   O     .         .         .         .         .         .         .         .         .         .         .         .
11405 170.   O     .         .         .         .         .         .         .         .         .         .         .         .
11410 171. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11415 172.   O     .         .         .         .         .         .         .         .         .         .         .         .
11420 173.    O    .         .         .         .         .         .         .         .         .         .         .         .
11425 174.    O    .         .         .         .         .         .         .         .         .         .         .         .
11430 175.    O    .         .         .         .         .         .         .         .         .         .         .         .
11435 176.    O    .         .         .         .         .         .         .         .         .         .         .         .
11440 177.    O    .         .         .         .         .         .         .         .         .         .         .         .
11445 178.    O    .         .         .         .         .         .         .         .         .         .         .         .
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11450 179.    O    .         .         .         .         .         .         .         .         .         .         .         .
11455 180.     O   .         .         .         .         .         .         .         .         .         .         .         .
11500 181. . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.     O   .         .         .         .         .         .         .         .         .         .         .         .
11510 183.     O   .         .         .         .         .         .         .         .         .         .         .         .
11515 184.      O  .         .         .         .         .         .         .         .         .         .         .         .
11520 185.      O  .         .         .         .         .         .         .         .         .         .         .         .
11525 186.       O .         .         .         .         .         .         .         .         .         .         .         .
11530 187.       O .         .         .         .         .         .         .         .         .         .         .         .
11535 188.        O.         .         .         .         .         .         .         .         .         .         .         .
11540 189.         O         .         .         .         .         .         .         .         .         .         .         .
11545 190.         .O        .         .         .         .         .         .         .         .         .         .         .
11550 191. . . . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.         .    O    .         .         .         .         .         .         .         .         .         .         .
11600 193.         .        O.         .         .         .         .         .         .         .         .         .         .
11605 194.         .         .        O.         .         .         .         .         .         .         .         .         .
11610 195.         .         .         .         .         .     O   .         .         .         .         .         .         .
11615 196.         .         .      O  .         .         .         .         .         .         .         .         .         .
11620 197.         . O       .         .         .         .         .         .         .         .         .         .         .
11625 198.        O.         .         .         .         .         .         .         .         .         .         .         .
11630 199.       O .         .         .         .         .         .         .         .         .         .         .         .
11635 200.      O  .         .         .         .         .         .         .         .         .         .         .         .
11640 201. . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.     O   .         .         .         .         .         .         .         .         .         .         .         .
11650 203.    O    .         .         .         .         .         .         .         .         .         .         .         .
11655 204.    O    .         .         .         .         .         .         .         .         .         .         .         .
11700 205.    O    .         .         .         .         .         .         .         .         .         .         .         .
11705 206.   O     .         .         .         .         .         .         .         .         .         .         .         .
11710 207.   O     .         .         .         .         .         .         .         .         .         .         .         .
11715 208.   O     .         .         .         .         .         .         .         .         .         .         .         .
11720 209.   O     .         .         .         .         .         .         .         .         .         .         .         .
11725 210.   O     .         .         .         .         .         .         .         .         .         .         .         .
11730 211. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.   O     .         .         .         .         .         .         .         .         .         .         .         .
11740 213.  O      .         .         .         .         .         .         .         .         .         .         .         .
11745 214.  O      .         .         .         .         .         .         .         .         .         .         .         .
11750 215.  O      .         .         .         .         .         .         .         .         .         .         .         .
11755 216.  O      .         .         .         .         .         .         .         .         .         .         .         .
11800 217.  O      .         .         .         .         .         .         .         .         .         .         .         .
11805 218.  O      .         .         .         .         .         .         .         .         .         .         .         .
11810 219.  O      .         .         .         .         .         .         .         .         .         .         .         .
11815 220.  O      .         .         .         .         .         .         .         .         .         .         .         .
11820 221. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.  O      .         .         .         .         .         .         .         .         .         .         .         .
11830 223. O       .         .         .         .         .         .         .         .         .         .         .         .
11835 224. O       .         .         .         .         .         .         .         .         .         .         .         .
11840 225. O       .         .         .         .         .         .         .         .         .         .         .         .
11845 226. O       .         .         .         .         .         .         .         .         .         .         .         .
11850 227. O       .         .         .         .         .         .         .         .         .         .         .         .
11855 228. O       .         .         .         .         .         .         .         .         .         .         .         .
11900 229. O       .         .         .         .         .         .         .         .         .         .         .         .
11905 230. O       .         .         .         .         .         .         .         .         .         .         .         .
11910 231. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232. O       .         .         .         .         .         .         .         .         .         .         .         .
11920 233. O       .         .         .         .         .         .         .         .         .         .         .         .
11925 234. O       .         .         .         .         .         .         .         .         .         .         .         .
11930 235. O       .         .         .         .         .         .         .         .         .         .         .         .
11935 236. O       .         .         .         .         .         .         .         .         .         .         .         .
11940 237. O       .         .         .         .         .         .         .         .         .         .         .         .
11945 238. O       .         .         .         .         .         .         .         .         .         .         .         .
11950 239. O       .         .         .         .         .         .         .         .         .         .         .         .
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11955 240. O       .         .         .         .         .         .         .         .         .         .         .         .
12000 241. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242. O       .         .         .         .         .         .         .         .         .         .         .         .
12010 243. O       .         .         .         .         .         .         .         .         .         .         .         .
12015 244. O       .         .         .         .         .         .         .         .         .         .         .         .
12020 245. O       .         .         .         .         .         .         .         .         .         .         .         .
12025 246. O       .         .         .         .         .         .         .         .         .         .         .         .
12030 247. O       .         .         .         .         .         .         .         .         .         .         .         .
12035 248. O       .         .         .         .         .         .         .         .         .         .         .         .
12040 249. O       .         .         .         .         .         .         .         .         .         .         .         .
12045 250. O       .         .         .         .         .         .         .         .         .         .         .         .
12050 251. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252. O       .         .         .         .         .         .         .         .         .         .         .         .
12100 253. O       .         .         .         .         .         .         .         .         .         .         .         .
12105 254. O       .         .         .         .         .         .         .         .         .         .         .         .
12110 255. O       .         .         .         .         .         .         .         .         .         .         .         .
12115 256. O       .         .         .         .         .         .         .         .         .         .         .         .
12120 257. O       .         .         .         .         .         .         .         .         .         .         .         .
12125 258. O       .         .         .         .         .         .         .         .         .         .         .         .
12130 259. O       .         .         .         .         .         .         .         .         .         .         .         .
12135 260. O       .         .         .         .         .         .         .         .         .         .         .         .
12140 261. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262. O       .         .         .         .         .         .         .         .         .         .         .         .
12150 263. O       .         .         .         .         .         .         .         .         .         .         .         .
12155 264. O       .         .         .         .         .         .         .         .         .         .         .         .
12200 265. O       .         .         .         .         .         .         .         .         .         .         .         .
12205 266. O       .         .         .         .         .         .         .         .         .         .         .         .
12210 267.O        .         .         .         .         .         .         .         .         .         .         .         .
12215 268.O        .         .         .         .         .         .         .         .         .         .         .         .
12220 269.O        .         .         .         .         .         .         .         .         .         .         .         .
12225 270.O        .         .         .         .         .         .         .         .         .         .         .         .
12230 271.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.O        .         .         .         .         .         .         .         .         .         .         .         .
12240 273.O        .         .         .         .         .         .         .         .         .         .         .         .
12245 274.O        .         .         .         .         .         .         .         .         .         .         .         .
12250 275.O        .         .         .         .         .         .         .         .         .         .         .         .
12255 276.O        .         .         .         .         .         .         .         .         .         .         .         .
12300 277.O        .         .         .         .         .         .         .         .         .         .         .         .
12305 278.O        .         .         .         .         .         .         .         .         .         .         .         .
12310 279.O        .         .         .         .         .         .         .         .         .         .         .         .
12315 280.O        .         .         .         .         .         .         .         .         .         .         .         .
12320 281.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.O        .         .         .         .         .         .         .         .         .         .         .         .
12330 283.O        .         .         .         .         .         .         .         .         .         .         .         .
12335 284.O        .         .         .         .         .         .         .         .         .         .         .         .
12340 285.O        .         .         .         .         .         .         .         .         .         .         .         .
12345 286.O        .         .         .         .         .         .         .         .         .         .         .         .
12350 287.O        .         .         .         .         .         .         .         .         .         .         .         .
12355 288.O        .         .         .         .         .         .         .         .         .         .         .         .
20000 289.O        .         .         .         .         .         .         .         .         .         .         .         .
20005 290.O        .         .         .         .         .         .         .         .         .         .         .         .
20010 291O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
20015 292O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
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            *            *
 39 KK      *  UND_STOR  *
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               HYDROGRAPH ROUTING DATA

 40 RS           STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC         .00  INITIAL CONDITION
                          X         .00 WORKING R AND D COEFFICIENT

 41 SV             STORAGE          .0        .0        .1        .1        .1        .2        .2        .3        .3        .4
                                    .4        .5        .5

 43 SQ           DISCHARGE          0.        0.        0.        0.        0.        0.        0.        0.        0.        3.
                                    5.        7.        8.

 45 SE           ELEVATION       22.50     23.00     23.50     24.00     24.50     25.00     25.50     26.00     26.50     27.00
                                 27.50     28.00     28.50
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HYDROGRAPH AT STATION UND_STOR

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	22.5	1		0810	99	0.	.0	22.6	1		1620	197	4.	.4	27.3
1		0005	2	0.	.0	22.5	1		0815	100	0.	.0	22.6	1		1625	198	4.	.4	27.1
1		0010	3	0.	.0	22.5	1		0820	101	0.	.0	22.6	1		1630	199	3.	.4	27.0
1		0015	4	0.	.0	22.5	1		0825	102	0.	.0	22.6	1		1635	200	3.	.4	26.9
1		0020	5	0.	.0	22.5	1		0830	103	0.	.0	22.6	1		1640	201	2.	.4	26.8
1		0025	6	0.	.0	22.5	1		0835	104	0.	.0	22.7	1		1645	202	2.	.3	26.8
1		0030	7	0.	.0	22.5	1		0840	105	0.	.0	22.7	1		1650	203	2.	.3	26.7
1		0035	8	0.	.0	22.5	1		0845	106	0.	.0	22.7	1		1655	204	1.	.3	26.7
1		0040	9	0.	.0	22.5	1		0850	107	0.	.0	22.7	1		1700	205	1.	.3	26.7
1		0045	10	0.	.0	22.5	1		0855	108	0.	.0	22.7	1		1705	206	1.	.3	26.6
1		0050	11	0.	.0	22.5	1		0900	109	0.	.0	22.7	1		1710	207	1.	.3	26.6
1		0055	12	0.	.0	22.5	1		0905	110	0.	.0	22.7	1		1715	208	1.	.3	26.6
1		0100	13	0.	.0	22.5	1		0910	111	0.	.0	22.7	1		1720	209	1.	.3	26.6
1		0105	14	0.	.0	22.5	1		0915	112	0.	.0	22.7	1		1725	210	1.	.3	26.6
1		0110	15	0.	.0	22.5	1		0920	113	0.	.0	22.8	1		1730	211	1.	.3	26.6
1		0115	16	0.	.0	22.5	1		0925	114	0.	.0	22.8	1		1735	212	1.	.3	26.6
1		0120	17	0.	.0	22.5	1		0930	115	0.	.0	22.8	1		1740	213	1.	.3	26.6
1		0125	18	0.	.0	22.5	1		0935	116	0.	.0	22.8	1		1745	214	1.	.3	26.6
1		0130	19	0.	.0	22.5	1		0940	117	0.	.0	22.8	1		1750	215	1.	.3	26.6
1		0135	20	0.	.0	22.5	1		0945	118	0.	.0	22.8	1		1755	216	1.	.3	26.6
1		0140	21	0.	.0	22.5	1		0950	119	0.	.0	22.8	1		1800	217	1.	.3	26.6

1	0145	22	0.	.0	22.5	*	1	0955	120	0.	.0	22.9	*	1	1805	218	1.	.3	26.6
1	0150	23	0.	.0	22.5	*	1	1000	121	0.	.0	22.9	*	1	1810	219	1.	.3	26.6
1	0155	24	0.	.0	22.5	*	1	1005	122	0.	.0	22.9	*	1	1815	220	1.	.3	26.6
1	0200	25	0.	.0	22.5	*	1	1010	123	0.	.0	22.9	*	1	1820	221	1.	.3	26.5
1	0205	26	0.	.0	22.5	*	1	1015	124	0.	.0	22.9	*	1	1825	222	1.	.3	26.5
1	0210	27	0.	.0	22.5	*	1	1020	125	0.	.0	22.9	*	1	1830	223	1.	.3	26.5
1	0215	28	0.	.0	22.5	*	1	1025	126	0.	.0	23.0	*	1	1835	224	1.	.3	26.5
1	0220	29	0.	.0	22.5	*	1	1030	127	0.	.0	23.0	*	1	1840	225	1.	.3	26.5
1	0225	30	0.	.0	22.5	*	1	1035	128	0.	.0	23.0	*	1	1845	226	0.	.3	26.5
1	0230	31	0.	.0	22.5	*	1	1040	129	0.	.0	23.0	*	1	1850	227	0.	.3	26.5
1	0235	32	0.	.0	22.5	*	1	1045	130	0.	.0	23.0	*	1	1855	228	0.	.3	26.5
1	0240	33	0.	.0	22.5	*	1	1050	131	0.	.0	23.0	*	1	1900	229	0.	.3	26.5
1	0245	34	0.	.0	22.5	*	1	1055	132	0.	.0	23.1	*	1	1905	230	0.	.3	26.5
1	0250	35	0.	.0	22.5	*	1	1100	133	0.	.0	23.1	*	1	1910	231	0.	.3	26.5
1	0255	36	0.	.0	22.5	*	1	1105	134	0.	.0	23.1	*	1	1915	232	0.	.3	26.5
1	0300	37	0.	.0	22.5	*	1	1110	135	0.	.0	23.1	*	1	1920	233	0.	.3	26.5
1	0305	38	0.	.0	22.5	*	1	1115	136	0.	.0	23.2	*	1	1925	234	0.	.3	26.5
1	0310	39	0.	.0	22.5	*	1	1120	137	0.	.0	23.2	*	1	1930	235	0.	.3	26.5
1	0315	40	0.	.0	22.5	*	1	1125	138	0.	.0	23.2	*	1	1935	236	0.	.3	26.5
1	0320	41	0.	.0	22.5	*	1	1130	139	0.	.0	23.2	*	1	1940	237	0.	.3	26.5
1	0325	42	0.	.0	22.5	*	1	1135	140	0.	.0	23.2	*	1	1945	238	0.	.3	26.5
1	0330	43	0.	.0	22.5	*	1	1140	141	0.	.0	23.3	*	1	1950	239	0.	.3	26.5
1	0335	44	0.	.0	22.5	*	1	1145	142	0.	.0	23.3	*	1	1955	240	0.	.3	26.5
1	0340	45	0.	.0	22.5	*	1	1150	143	0.	.0	23.3	*	1	2000	241	0.	.3	26.5
1	0345	46	0.	.0	22.5	*	1	1155	144	0.	.0	23.4	*	1	2005	242	0.	.3	26.5
1	0350	47	0.	.0	22.5	*	1	1200	145	0.	.0	23.4	*	1	2010	243	0.	.3	26.5
1	0355	48	0.	.0	22.5	*	1	1205	146	0.	.0	23.4	*	1	2015	244	0.	.3	26.5
1	0400	49	0.	.0	22.5	*	1	1210	147	0.	.1	23.4	*	1	2020	245	0.	.3	26.5
1	0405	50	0.	.0	22.5	*	1	1215	148	0.	.1	23.5	*	1	2025	246	0.	.3	26.5
1	0410	51	0.	.0	22.5	*	1	1220	149	0.	.1	23.5	*	1	2030	247	0.	.3	26.5
1	0415	52	0.	.0	22.5	*	1	1225	150	0.	.1	23.5	*	1	2035	248	0.	.3	26.5
1	0420	53	0.	.0	22.5	*	1	1230	151	0.	.1	23.6	*	1	2040	249	0.	.3	26.5
1	0425	54	0.	.0	22.5	*	1	1235	152	0.	.1	23.6	*	1	2045	250	0.	.3	26.5
1	0430	55	0.	.0	22.5	*	1	1240	153	0.	.1	23.6	*	1	2050	251	0.	.3	26.5
1	0435	56	0.	.0	22.5	*	1	1245	154	0.	.1	23.7	*	1	2055	252	0.	.3	26.5
1	0440	57	0.	.0	22.5	*	1	1250	155	0.	.1	23.7	*	1	2100	253	0.	.3	26.5
1	0445	58	0.	.0	22.5	*	1	1255	156	0.	.1	23.7	*	1	2105	254	0.	.3	26.5
1	0450	59	0.	.0	22.5	*	1	1300	157	0.	.1	23.8	*	1	2110	255	0.	.3	26.5
1	0455	60	0.	.0	22.5	*	1	1305	158	0.	.1	23.8	*	1	2115	256	0.	.3	26.5
1	0500	61	0.	.0	22.5	*	1	1310	159	0.	.1	23.8	*	1	2120	257	0.	.3	26.5
1	0505	62	0.	.0	22.5	*	1	1315	160	0.	.1	23.9	*	1	2125	258	0.	.3	26.5
1	0510	63	0.	.0	22.5	*	1	1320	161	0.	.1	23.9	*	1	2130	259	0.	.3	26.5
1	0515	64	0.	.0	22.5	*	1	1325	162	0.	.1	24.0	*	1	2135	260	0.	.3	26.5
1	0520	65	0.	.0	22.5	*	1	1330	163	0.	.1	24.0	*	1	2140	261	0.	.3	26.5
1	0525	66	0.	.0	22.5	*	1	1335	164	0.	.1	24.0	*	1	2145	262	0.	.3	26.5
1	0530	67	0.	.0	22.5	*	1	1340	165	0.	.1	24.1	*	1	2150	263	0.	.3	26.5
1	0535	68	0.	.0	22.5	*	1	1345	166	0.	.1	24.1	*	1	2155	264	0.	.3	26.5
1	0540	69	0.	.0	22.5	*	1	1350	167	0.	.1	24.1	*	1	2200	265	0.	.3	26.5
1	0545	70	0.	.0	22.5	*	1	1355	168	0.	.1	24.2	*	1	2205	266	0.	.3	26.5
1	0550	71	0.	.0	22.5	*	1	1400	169	0.	.1	24.2	*	1	2210	267	0.	.3	26.5
1	0555	72	0.	.0	22.5	*	1	1405	170	0.	.1	24.3	*	1	2215	268	0.	.3	26.5
1	0600	73	0.	.0	22.5	*	1	1410	171	0.	.1	24.3	*	1	2220	269	0.	.3	26.5
1	0605	74	0.	.0	22.5	*	1	1415	172	0.	.1	24.4	*	1	2225	270	0.	.3	26.5
1	0610	75	0.	.0	22.5	*	1	1420	173	0.	.1	24.4	*	1	2230	271	0.	.3	26.5
1	0615	76	0.	.0	22.5	*	1	1425	174	0.	.1	24.4	*	1	2235	272	0.	.3	26.5
1	0620	77	0.	.0	22.5	*	1	1430	175	0.	.1	24.5	*	1	2240	273	0.	.3	26.5
1	0625	78	0.	.0	22.5	*	1	1435	176	0.	.1	24.6	*	1	2245	274	0.	.3	26.5
1	0630	79	0.	.0	22.5	*	1	1440	177	0.	.1	24.6	*	1	2250	275	0.	.3	26.5
1	0635	80	0.	.0	22.5	*	1	1445	178	0.	.1	24.7	*	1	2255	276	0.	.3	26.5
1	0640	81	0.	.0	22.5	*	1	1450	179	0.	.2	24.7	*	1	2300	277	0.	.3	26.5
1	0645	82	0.	.0	22.5	*	1	1455	180	0.	.2	24.8	*	1	2305	278	0.	.3	26.5

1	0650	83	0.	.0	22.5	*	1	1500	181	0.	.2	24.8	*	1	2310	279	0.	.3	26.5
1	0655	84	0.	.0	22.5	*	1	1505	182	0.	.2	24.9	*	1	2315	280	0.	.3	26.5
1	0700	85	0.	.0	22.5	*	1	1510	183	0.	.2	25.0	*	1	2320	281	0.	.3	26.5
1	0705	86	0.	.0	22.5	*	1	1515	184	0.	.2	25.0	*	1	2325	282	0.	.3	26.5
1	0710	87	0.	.0	22.5	*	1	1520	185	0.	.2	25.1	*	1	2330	283	0.	.3	26.5
1	0715	88	0.	.0	22.5	*	1	1525	186	0.	.2	25.2	*	1	2335	284	0.	.3	26.5
1	0720	89	0.	.0	22.5	*	1	1530	187	0.	.2	25.3	*	1	2340	285	0.	.3	26.5
1	0725	90	0.	.0	22.5	*	1	1535	188	0.	.2	25.4	*	1	2345	286	0.	.3	26.5
1	0730	91	0.	.0	22.6	*	1	1540	189	0.	.2	25.5	*	1	2350	287	0.	.3	26.4
1	0735	92	0.	.0	22.6	*	1	1545	190	0.	.2	25.6	*	1	2355	288	0.	.3	26.4
1	0740	93	0.	.0	22.6	*	1	1550	191	0.	.3	25.8	*	2	0000	289	0.	.3	26.4
1	0745	94	0.	.0	22.6	*	1	1555	192	0.	.3	25.9	*	2	0005	290	0.	.3	26.4
1	0750	95	0.	.0	22.6	*	1	1600	193	0.	.3	26.1	*	2	0010	291	0.	.3	26.4
1	0755	96	0.	.0	22.6	*	1	1605	194	0.	.3	26.5	*	2	0015	292	0.	.3	26.4
1	0800	97	0.	.0	22.6	*	1	1610	195	3.	.4	27.0	*						
1	0805	98	0.	.0	22.6	*	1	1615	196	4.	.4	27.3	*						
						*							*						

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.25-HR
+ (CFS)	(HR)					
		(CFS)				
+ 4.	16.25		1.	0.	0.	0.
		(INCHES)	.935	1.990	2.004	2.004
		(AC-FT)	0.	1.	1.	1.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.25-HR
+ (AC-FT)	(HR)				
0.	16.25	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.25-HR
+ (FEET)	(HR)				
27.30	16.25	26.59	24.27	24.26	24.26

CUMULATIVE AREA = .01 SQ MI

1 STATION UND_STOR

```
                    (I) INFLOW,   (O) OUTFLOW
        0.       2.       4.       6.       8.      10.      12.       0.       0.       0.       0.       0.       0.
                                                                                  (S) STORAGE
        .0       .0       .0       .0       .0       .0       .0       .2       .4       .0       .0       .0       .0
DAHRMN PER
 10000   1I-O-------.---------.---------.---------.---------.---------S---------.---------.---------.---------.---------.---------.
 10005   2I O       .         .         .         .         .         S         .         .         .         .         .         .
 10010   3.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10015   4.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10020   5.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10025   6.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10030   7.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10035   8.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10040   9.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10045  10.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10050  11.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  12.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10100  13.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10105  14.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10110  15.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10115  16.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10120  17.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10125  18.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10130  19.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10135  20.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10140  21.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10145  22.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10150  23.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10155  24.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10200  25.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10205  26.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10210  27.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10215  28.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10220  29.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10225  30.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10230  31.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10240  33.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10245  34.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10250  35.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10255  36.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10300  37.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10305  38.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10310  39.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10315  40.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10320  41.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10330  43.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10335  44.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10340  45.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10345  46.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10350  47.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10355  48.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10400  49.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10405  50.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10410  51.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52. I       .         .         .         .         .         S         .         .         .         .         .         .
 10420  53. I       .         .         .         .         .         S         .         .         .         .         .         .
 10425  54. I       .         .         .         .         .         S         .         .         .         .         .         .
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10430  55. I       .         .         .         .         .         S         .         .         .         .         .         .
10435  56. I       .         .         .         .         .         S         .         .         .         .         .         .
10440  57. I       .         .         .         .         .         S         .         .         .         .         .         .
10445  58. I       .         .         .         .         .         S         .         .         .         .         .         .
10450  59. I       .         .         .         .         .         S         .         .         .         .         .         .
10455  60. I       .         .         .         .         .         S         .         .         .         .         .         .
10500  61. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10505  62. I       .         .         .         .         .         S         .         .         .         .         .         .
10510  63. I       .         .         .         .         .         S         .         .         .         .         .         .
10515  64. I       .         .         .         .         .         S         .         .         .         .         .         .
10520  65. I       .         .         .         .         .         S         .         .         .         .         .         .
10525  66. I       .         .         .         .         .         S         .         .         .         .         .         .
10530  67. I       .         .         .         .         .         S         .         .         .         .         .         .
10535  68. I       .         .         .         .         .         S         .         .         .         .         .         .
10540  69. I       .         .         .         .         .         S         .         .         .         .         .         .
10545  70. I       .         .         .         .         .         S         .         .         .         .         .         .
10550  71. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10555  72. I       .         .         .         .         .         S         .         .         .         .         .         .
10600  73. I       .         .         .         .         .         S         .         .         .         .         .         .
10605  74. I       .         .         .         .         .         S         .         .         .         .         .         .
10610  75. I       .         .         .         .         .         S         .         .         .         .         .         .
10615  76. I       .         .         .         .         .         S         .         .         .         .         .         .
10620  77. I       .         .         .         .         .         S         .         .         .         .         .         .
10625  78. I       .         .         .         .         .         S         .         .         .         .         .         .
10630  79. I       .         .         .         .         .         S         .         .         .         .         .         .
10635  80. I       .         .         .         .         .         S         .         .         .         .         .         .
10640  81. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10645  82. I       .         .         .         .         .         S         .         .         .         .         .         .
10650  83. I       .         .         .         .         .         S         .         .         .         .         .         .
10655  84. I       .         .         .         .         .         S         .         .         .         .         .         .
10700  85. I       .         .         .         .         .         S         .         .         .         .         .         .
10705  86. I       .         .         .         .         .         S         .         .         .         .         .         .
10710  87. I       .         .         .         .         .         S         .         .         .         .         .         .
10715  88. I       .         .         .         .         .         S         .         .         .         .         .         .
10720  89. I       .         .         .         .         .         S         .         .         .         .         .         .
10725  90. I       .         .         .         .         .         S         .         .         .         .         .         .
10730  91. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735  92. I       .         .         .         .         .         S         .         .         .         .         .         .
10740  93. I       .         .         .         .         .         S         .         .         .         .         .         .
10745  94. I       .         .         .         .         .         S         .         .         .         .         .         .
10750  95. I       .         .         .         .         .         S         .         .         .         .         .         .
10755  96. I       .         .         .         .         .         S         .         .         .         .         .         .
10800  97. I       .         .         .         .         .         S         .         .         .         .         .         .
10805  98. I       .         .         .         .         .         S         .         .         .         .         .         .
10810  99. I       .         .         .         .         .         S         .         .         .         .         .         .
10815 100. I       .         .         .         .         .         S         .         .         .         .         .         .
10820 101. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10825 102. I       .         .         .         .         .         S         .         .         .         .         .         .
10830 103. I       .         .         .         .         .         S         .         .         .         .         .         .
10835 104. I       .         .         .         .         .         S         .         .         .         .         .         .
10840 105. I       .         .         .         .         .         S         .         .         .         .         .         .
10845 106. I       .         .         .         .         .         S         .         .         .         .         .         .
10850 107. I       .         .         .         .         .         S         .         .         .         .         .         .
10855 108. I       .         .         .         .         .         .S        .         .         .         .         .         .
10900 109. I       .         .         .         .         .         .S        .         .         .         .         .         .
10905 110. I       .         .         .         .         .         .S        .         .         .         .         .         .
10910 111. I . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10915 112. I       .         .         .         .         .         .S        .         .         .         .         .         .
10920 113. I       .         .         .         .         .         .S        .         .         .         .         .         .
10925 114. I       .         .         .         .         .         .S        .         .         .         .         .         .
10930 115. I       .         .         .         .         .         .S        .         .         .         .         .         .
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10935 116. I       .         .         .         .         .         .S        .         .         .         .         .         .
10940 117. I       .         .         .         .         .         .S        .         .         .         .         .         .
10945 118. I       .         .         .         .         .         .S        .         .         .         .         .         .
10950 119. I       .         .         .         .         .         .S        .         .         .         .         .         .
10955 120. I       .         .         .         .         .         .S        .         .         .         .         .         .
11000 121. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122. I       .         .         .         .         .         .S        .         .         .         .         .         .
11010 123. I       .         .         .         .         .         .S        .         .         .         .         .         .
11015 124. I       .         .         .         .         .         .S        .         .         .         .         .         .
11020 125. I       .         .         .         .         .         .S        .         .         .         .         .         .
11025 126. I       .         .         .         .         .         .S        .         .         .         .         .         .
11030 127. I       .         .         .         .         .         .S        .         .         .         .         .         .
11035 128. I       .         .         .         .         .         .S        .         .         .         .         .         .
11040 129. I       .         .         .         .         .         .S        .         .         .         .         .         .
11045 130. I       .         .         .         .         .         .S        .         .         .         .         .         .
11050 131. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132. I       .         .         .         .         .         .S        .         .         .         .         .         .
11100 133. I       .         .         .         .         .         . S       .         .         .         .         .         .
11105 134. I       .         .         .         .         .         . S       .         .         .         .         .         .
11110 135. I       .         .         .         .         .         . S       .         .         .         .         .         .
11115 136. I       .         .         .         .         .         . S       .         .         .         .         .         .
11120 137. I       .         .         .         .         .         . S       .         .         .         .         .         .
11125 138. I       .         .         .         .         .         . S       .         .         .         .         .         .
11130 139. I       .         .         .         .         .         . S       .         .         .         .         .         .
11135 140. OI      .         .         .         .         .         . S       .         .         .         .         .         .
11140 141. OI. . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142. OI      .         .         .         .         .         . S       .         .         .         .         .         .
11150 143. OI      .         .         .         .         .         . S       .         .         .         .         .         .
11155 144. OI      .         .         .         .         .         . S       .         .         .         .         .         .
11200 145. OI      .         .         .         .         .         . S       .         .         .         .         .         .
11205 146. OI      .         .         .         .         .         . S       .         .         .         .         .         .
11210 147. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11215 148. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11220 149. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11225 150. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11230 151. OI. . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11235 152. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11240 153. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11245 154. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11250 155. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11255 156. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
11300 157. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
11305 158. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
11310 159. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
11315 160. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
11320 161. O I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11325 162. O I     .         .         .         .         .         .   S     .         .         .         .         .         .
11330 163. O I     .         .         .         .         .         .   S     .         .         .         .         .         .
11335 164. O I     .         .         .         .         .         .    S    .         .         .         .         .         .
11340 165. O I     .         .         .         .         .         .    S    .         .         .         .         .         .
11345 166. O I     .         .         .         .         .         .    S    .         .         .         .         .         .
11350 167. O I     .         .         .         .         .         .    S    .         .         .         .         .         .
11355 168. O I     .         .         .         .         .         .    S    .         .         .         .         .         .
11400 169. O I     .         .         .         .         .         .    S    .         .         .         .         .         .
11405 170. O I     .         .         .         .         .         .     S   .         .         .         .         .         .
11410 171. O I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11415 172. O I     .         .         .         .         .         .     S   .         .         .         .         .         .
11420 173. O  I    .         .         .         .         .         .     S   .         .         .         .         .         .
11425 174. O  I    .         .         .         .         .         .     S   .         .         .         .         .         .
11430 175. O  I    .         .         .         .         .         .      S  .         .         .         .         .         .
11435 176. O  I    .         .         .         .         .         .      S  .         .         .         .         .         .
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11440 177. O  I    .         .         .         .         .         .     S  .         .         .         .         .         .
11445 178. O  I    .         .         .         .         .         .     S  .         .         .         .         .         .
11450 179. O  I    .         .         .         .         .         .      S .         .         .         .         .         .
11455 180. O   I   .         .         .         .         .         .      S .         .         .         .         .         .
11500 181. O . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182. O   I   .         .         .         .         .         .      S .         .         .         .         .         .
11510 183. O   I   .         .         .         .         .         .       S.         .         .         .         .         .
11515 184. O    I  .         .         .         .         .         .       S.         .         .         .         .         .
11520 185. O    I  .         .         .         .         .         .       S.         .         .         .         .         .
11525 186. O     I .         .         .         .         .         .        S         .         .         .         .         .
11530 187. O     I .         .         .         .         .         .        S         .         .         .         .         .
11535 188. O      I.         .         .         .         .         .        .S        .         .         .         .         .
11540 189. O       I         .         .         .         .         .        .S        .         .         .         .         .
11545 190. O       .I        .         .         .         .         .        . S       .         .         .         .         .
11550 191. O . . . . . I . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192. O       .    I    .         .         .         .         .        . S       .         .         .         .         .
11600 193. O       .        I.         .         .         .         .        .  S      .         .         .         .         .
11605 194. O       .         .        I.         .         .         .        .    S    .         .         .         .         .
11610 195.         .   O     .         .         .         .    I    .        .      S .         .         .         .         .
11615 196.         .         . O    I  .         .         .         .        .        S         .         .         .         .
11620 197.         . I       .O        .         .         .         .        .        S         .         .         .         .
11625 198.        I.       O .         .         .         .         .        .       S.         .         .         .         .
11630 199.       I .     O   .         .         .         .         .        .       S.         .         .         .         .
11635 200.      I  .  O      .         .         .         .         .        .      S .         .         .         .         .
11640 201. . . I . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.     I  O.         .         .         .         .         .        .     S  .         .         .         .         .
11650 203.    I  O .         .         .         .         .         .        .     S  .         .         .         .         .
11655 204.    I O  .         .         .         .         .         .        .     S  .         .         .         .         .
11700 205.    IO   .         .         .         .         .         .        .     S  .         .         .         .         .
11705 206.   I O   .         .         .         .         .         .        .     S  .         .         .         .         .
11710 207.   IO    .         .         .         .         .         .        .     S  .         .         .         .         .
11715 208.   IO    .         .         .         .         .         .        .     S  .         .         .         .         .
11720 209.   IO    .         .         .         .         .         .        .     S  .         .         .         .         .
11725 210.   I     .         .         .         .         .         .        .     S  .         .         .         .         .
11730 211. . I . . . . . . . . . . . . . . . . . . .
```

```
11945 238. I       .         .         .         .         .         .         .    S    .         .         .         .         .
11950 239. I       .         .         .         .         .         .         .    S    .         .         .         .         .
11955 240. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12000 241. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12005 242. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12010 243. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12015 244. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12020 245. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12025 246. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12030 247. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12035 248. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12040 249. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12045 250. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12050 251. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12055 252. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12100 253. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12105 254. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12110 255. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12115 256. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12120 257. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12125 258. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12130 259. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12135 260. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12140 261. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12145 262. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12150 263. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12155 264. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12200 265. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12205 266. I       .         .         .         .         .         .         .    S    .         .         .         .         .
12210 267.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12215 268.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12220 269.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12225 270.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12230 271.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12240 273.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12245 274.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12250 275.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12255 276.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12300 277.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12305 278.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12310 279.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12315 280.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12320 281.IO . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12330 283.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12335 284.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12340 285.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12345 286.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12350 287.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
12355 288.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
20000 289.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
20005 290.IO       .         .         .         .         .         .         .    S    .         .         .         .         .
20010 291I O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
20015 292I-O-------.---------.---------.---------.---------.---------.---------.-----S---.---------.---------.---------.---------.
```

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB_AREA	11.	16.17	1.	1.	1.	.01		
+	ROUTED TO	UND_STOR	4.	16.25	1.	0.	0.	.01		
+									27.30	16.25

*** NORMAL END OF HEC-1 ***

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   15MAR18  TIME  16:00:00  *
 *                                      *
 ****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                        *DIAGRAM
             1          ID        RESIDENCE AT CASA LOMA - REDLANDS
             2          ID        PROPOSED CONDITION
             3          ID        UNDERGROUND STORAGE ANALYSIS - 100-YEAR
 *** FREE ***
             4          IT       5       0       0     293
             5          IO       0       2
             6          IN       5

             7          KKSUB_AREA
             8          QI    0.00    0.01    0.25    0.33    0.33    0.33    0.33    0.34    0.34    0.34
             9          QI    0.34    0.34    0.34    0.34    0.34    0.34    0.35    0.35    0.35    0.35
            10          QI    0.35    0.35    0.35    0.35    0.35    0.36    0.36    0.36    0.36    0.36
            11          QI    0.36    0.36    0.36    0.37    0.37    0.37    0.37    0.37    0.37    0.37
            12          QI    0.37    0.38    0.38    0.38    0.38    0.38    0.38    0.38    0.39    0.39
            13          QI    0.39    0.39    0.39    0.39    0.40    0.40    0.40    0.40    0.40    0.40
            14          QI    0.41    0.41    0.41    0.41    0.41    0.41    0.42    0.42    0.42    0.42
            15          QI    0.42    0.43    0.43    0.43    0.43    0.43    0.44    0.44    0.44    0.44
            16          QI    0.45    0.45    0.45    0.45    0.45    0.46    0.46    0.46    0.46    0.47
            17          QI    0.47    0.47    0.47    0.48    0.48    0.48    0.49    0.49    0.49    0.49
            18          QI    0.50    0.50    0.50    0.51    0.51    0.51    0.52    0.52    0.52    0.53
            19          QI    0.53    0.53    0.54    0.54    0.54    0.55    0.55    0.56    0.56    0.57
            20          QI    0.57    0.58    0.58    0.58    0.59    0.59    0.60    0.60    0.61    0.61
            21          QI    0.62    0.62    0.63    0.64    0.64    0.65    0.65    0.66    0.67    0.67
            22          QI    0.68    0.69    0.70    0.71    0.71    0.73    0.76    0.79    0.80    0.81
            23          QI    0.82    0.83    0.84    0.85    0.86    0.87    0.89    0.90    0.91    0.93
            24          QI    0.94    0.96    0.97    0.99    1.01    1.03    1.04    1.07    1.09    1.12
            25          QI    1.15    1.17    1.21    1.24    1.27    1.31    1.34    1.39    1.44    1.48
            26          QI    1.55    1.61    1.66    1.77    1.85    2.03    2.37    2.50    2.76    3.06
            27          QI    3.36    4.33    5.42    8.19   15.09    7.19    3.36    2.58    2.05    1.81
            28          QI    1.64    1.51    1.41    1.33    1.25    1.19    1.13    1.08    1.04    1.00
            29          QI    0.96    0.93    0.91    0.88    0.86    0.83    0.81    0.79    0.74    0.71
            30          QI    0.69    0.68    0.67    0.65    0.64    0.63    0.62    0.61    0.60    0.59
            31          QI    0.58    0.57    0.56    0.55    0.54    0.54    0.53    0.52    0.51    0.51
            32          QI    0.50    0.50    0.49    0.48    0.48    0.47    0.47    0.46    0.46    0.45
            33          QI    0.45    0.44    0.44    0.44    0.43    0.43    0.42    0.42    0.42    0.41
            34          QI    0.41    0.40    0.40    0.40    0.39    0.39    0.39    0.39    0.38    0.38
            35          QI    0.38    0.37    0.37    0.37    0.37    0.36    0.36    0.36    0.36    0.35
            36          QI    0.35    0.35    0.35    0.34    0.34    0.34    0.34    0.34    0.33    0.33
            37          QI    0.31    0.06    0.00
            38          BA  0.0082

            39          KKUND_STOR
            40          RS       1    ELEV       0
            41          SV   0.000   0.026   0.053   0.088   0.131   0.177   0.226   0.275   0.324   0.372
            42          SV   0.419   0.461   0.497
            43          SQ    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.31    0.31    3.15
            44          SQ    5.22    6.65    7.81
            45          SE   22.50   23.00   23.50   24.00   24.50   25.00   25.50   26.00   26.50   27.00
            46          SE   27.50   28.00   28.50
            47          ZZ
```

```
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

     7    SUB_AREA
                V
                V
    39    UND_STOR

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
```

```
1****************************************                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998               *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   15MAR18  TIME  16:00:00   *
 *                                       *
 ****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
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```
                              RESIDENCE AT CASA LOMA - REDLANDS
                              PROPOSED CONDITION
                              UNDERGROUND STORAGE ANALYSIS - 100-YEAR

   5 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           0  PRINT CONTROL
                       IPLOT           2  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         293  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        0020  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.33 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
   7 KK     *  SUB_AREA  *
            *            *
            **************

   6 IN          TIME DATA FOR INPUT TIME SERIES
                        JXMIN           5  TIME INTERVAL IN MINUTES
                      JXDATE      1    0  STARTING DATE
                      JXTIME           0  STARTING TIME

               SUBBASIN RUNOFF DATA
```

38 BA SUBBASIN CHARACTERISTICS
TAREA .01 SUBBASIN AREA

***

HYDROGRAPH AT STATION SUB_AREA

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0610	75	0.	1		1220	149	1.	1		1830	223	1.
1		0005	2	0.	1		0615	76	0.	1		1225	150	1.	1		1835	224	1.
1		0010	3	0.	1		0620	77	0.	1		1230	151	1.	1		1840	225	1.
1		0015	4	0.	1		0625	78	0.	1		1235	152	1.	1		1845	226	1.
1		0020	5	0.	1		0630	79	0.	1		1240	153	1.	1		1850	227	1.
1		0025	6	0.	1		0635	80	0.	1		1245	154	1.	1		1855	228	1.
1		0030	7	0.	1		0640	81	0.	1		1250	155	1.	1		1900	229	1.
1		0035	8	0.	1		0645	82	0.	1		1255	156	1.	1		1905	230	1.
1		0040	9	0.	1		0650	83	0.	1		1300	157	1.	1		1910	231	1.
1		0045	10	0.	1		0655	84	0.	1		1305	158	1.	1		1915	232	1.
1		0050	11	0.	1		0700	85	0.	1		1310	159	1.	1		1920	233	1.
1		0055	12	0.	1		0705	86	0.	1		1315	160	1.	1		1925	234	1.
1		0100	13	0.	1		0710	87	0.	1		1320	161	1.	1		1930	235	1.
1		0105	14	0.	1		0715	88	0.	1		1325	162	1.	1		1935	236	1.
1		0110	15	0.	1		0720	89	0.	1		1330	163	1.	1		1940	237	1.
1		0115	16	0.	1		0725	90	0.	1		1335	164	1.	1		1945	238	1.
1		0120	17	0.	1		0730	91	0.	1		1340	165	1.	1		1950	239	1.
1		0125	18	0.	1		0735	92	0.	1		1345	166	1.	1		1955	240	1.
1		0130	19	0.	1		0740	93	0.	1		1350	167	1.	1		2000	241	1.
1		0135	20	0.	1		0745	94	0.	1		1355	168	1.	1		2005	242	1.
1		0140	21	0.	1		0750	95	0.	1		1400	169	1.	1		2010	243	0.
1		0145	22	0.	1		0755	96	0.	1		1405	170	1.	1		2015	244	0.
1		0150	23	0.	1		0800	97	0.	1		1410	171	1.	1		2020	245	0.
1		0155	24	0.	1		0805	98	0.	1		1415	172	1.	1		2025	246	0.
1		0200	25	0.	1		0810	99	0.	1		1420	173	1.	1		2030	247	0.
1		0205	26	0.	1		0815	100	0.	1		1425	174	1.	1		2035	248	0.
1		0210	27	0.	1		0820	101	1.	1		1430	175	1.	1		2040	249	0.
1		0215	28	0.	1		0825	102	1.	1		1435	176	1.	1		2045	250	0.
1		0220	29	0.	1		0830	103	1.	1		1440	177	1.	1		2050	251	0.
1		0225	30	0.	1		0835	104	1.	1		1445	178	1.	1		2055	252	0.
1		0230	31	0.	1		0840	105	1.	1		1450	179	1.	1		2100	253	0.
1		0235	32	0.	1		0845	106	1.	1		1455	180	1.	1		2105	254	0.
1		0240	33	0.	1		0850	107	1.	1		1500	181	2.	1		2110	255	0.
1		0245	34	0.	1		0855	108	1.	1		1505	182	2.	1		2115	256	0.
1		0250	35	0.	1		0900	109	1.	1		1510	183	2.	1		2120	257	0.
1		0255	36	0.	1		0905	110	1.	1		1515	184	2.	1		2125	258	0.
1		0300	37	0.	1		0910	111	1.	1		1520	185	2.	1		2130	259	0.
1		0305	38	0.	1		0915	112	1.	1		1525	186	2.	1		2135	260	0.
1		0310	39	0.	1		0920	113	1.	1		1530	187	2.	1		2140	261	0.
1		0315	40	0.	1		0925	114	1.	1		1535	188	3.	1		2145	262	0.
1		0320	41	0.	1		0930	115	1.	1		1540	189	3.	1		2150	263	0.
1		0325	42	0.	1		0935	116	1.	1		1545	190	3.	1		2155	264	0.
1		0330	43	0.	1		0940	117	1.	1		1550	191	3.	1		2200	265	0.
1		0335	44	0.	1		0945	118	1.	1		1555	192	4.	1		2205	266	0.
1		0340	45	0.	1		0950	119	1.	1		1600	193	5.	1		2210	267	0.
1		0345	46	0.	1		0955	120	1.	1		1605	194	8.	1		2215	268	0.
1		0350	47	0.	1		1000	121	1.	1		1610	195	15.	1		2220	269	0.

1	0355	48	0.	*	1	1005	122	1.	*	1	1615	196	7.	*	1	2225	270	0.
1	0400	49	0.	*	1	1010	123	1.	*	1	1620	197	3.	*	1	2230	271	0.
1	0405	50	0.	*	1	1015	124	1.	*	1	1625	198	3.	*	1	2235	272	0.
1	0410	51	0.	*	1	1020	125	1.	*	1	1630	199	2.	*	1	2240	273	0.
1	0415	52	0.	*	1	1025	126	1.	*	1	1635	200	2.	*	1	2245	274	0.
1	0420	53	0.	*	1	1030	127	1.	*	1	1640	201	2.	*	1	2250	275	0.
1	0425	54	0.	*	1	1035	128	1.	*	1	1645	202	2.	*	1	2255	276	0.
1	0430	55	0.	*	1	1040	129	1.	*	1	1650	203	1.	*	1	2300	277	0.
1	0435	56	0.	*	1	1045	130	1.	*	1	1655	204	1.	*	1	2305	278	0.
1	0440	57	0.	*	1	1050	131	1.	*	1	1700	205	1.	*	1	2310	279	0.
1	0445	58	0.	*	1	1055	132	1.	*	1	1705	206	1.	*	1	2315	280	0.
1	0450	59	0.	*	1	1100	133	1.	*	1	1710	207	1.	*	1	2320	281	0.
1	0455	60	0.	*	1	1105	134	1.	*	1	1715	208	1.	*	1	2325	282	0.
1	0500	61	0.	*	1	1110	135	1.	*	1	1720	209	1.	*	1	2330	283	0.
1	0505	62	0.	*	1	1115	136	1.	*	1	1725	210	1.	*	1	2335	284	0.
1	0510	63	0.	*	1	1120	137	1.	*	1	1730	211	1.	*	1	2340	285	0.
1	0515	64	0.	*	1	1125	138	1.	*	1	1735	212	1.	*	1	2345	286	0.
1	0520	65	0.	*	1	1130	139	1.	*	1	1740	213	1.	*	1	2350	287	0.
1	0525	66	0.	*	1	1135	140	1.	*	1	1745	214	1.	*	1	2355	288	0.
1	0530	67	0.	*	1	1140	141	1.	*	1	1750	215	1.	*	2	0000	289	0.
1	0535	68	0.	*	1	1145	142	1.	*	1	1755	216	1.	*	2	0005	290	0.
1	0540	69	0.	*	1	1150	143	1.	*	1	1800	217	1.	*	2	0010	291	0.
1	0545	70	0.	*	1	1155	144	1.	*	1	1805	218	1.	*	2	0015	292	0.
1	0550	71	0.	*	1	1200	145	1.	*	1	1810	219	1.	*	2	0020	293	0.
1	0555	72	0.	*	1	1205	146	1.	*	1	1815	220	1.	*				
1	0600	73	0.	*	1	1210	147	1.	*	1	1820	221	1.	*				
1	0605	74	0.	*	1	1215	148	1.	*	1	1825	222	1.	*				
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.33-HR
+ (CFS)	(HR)	(CFS)				
+ 15.	16.17		2.	1.	1.	1.
		(INCHES)	2.034	3.599	3.605	3.605
		(AC-FT)	1.	2.	2.	2.

CUMULATIVE AREA = .01 SQ MI

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                    (O) OUTFLOW
          0.        2.        4.        6.        8.       10.       12.       14.       16.        0.        0.        0.        0.
DAHRMN PER
 10000   1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005   2O         .         .         .         .         .         .         .         .         .         .         .         .
 10010   3.O        .         .         .         .         .         .         .         .         .         .         .         .
 10015   4. O       .         .         .         .         .         .         .         .         .         .         .         .
 10020   5. O       .         .         .         .         .         .         .         .         .         .         .         .
 10025   6. O       .         .         .         .         .         .         .         .         .         .         .         .
 10030   7. O       .         .         .         .         .         .         .         .         .         .         .         .
 10035   8. O       .         .         .         .         .         .         .         .         .         .         .         .
 10040   9. O       .         .         .         .         .         .         .         .         .         .         .         .
 10045  10. O       .         .         .         .         .         .         .         .         .         .         .         .
 10050  11. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  12. O       .         .         .         .         .         .         .         .         .         .         .         .
 10100  13. O       .         .         .         .         .         .         .         .         .         .         .         .
 10105  14. O       .         .         .         .         .         .         .         .         .         .         .         .
 10110  15. O       .         .         .         .         .         .         .         .         .         .         .         .
 10115  16. O       .         .         .         .         .         .         .         .         .         .         .         .
 10120  17. O       .         .         .         .         .         .         .         .         .         .         .         .
 10125  18. O       .         .         .         .         .         .         .         .         .         .         .         .
 10130  19. O       .         .         .         .         .         .         .         .         .         .         .         .
 10135  20. O       .         .         .         .         .         .         .         .         .         .         .         .
 10140  21. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10145  22. O       .         .         .         .         .         .         .         .         .         .         .         .
 10150  23. O       .         .         .         .         .         .         .         .         .         .         .         .
 10155  24. O       .         .         .         .         .         .         .         .         .         .         .         .
 10200  25. O       .         .         .         .         .         .         .         .         .         .         .         .
 10205  26. O       .         .         .         .         .         .         .         .         .         .         .         .
 10210  27. O       .         .         .         .         .         .         .         .         .         .         .         .
 10215  28. O       .         .         .         .         .         .         .         .         .         .         .         .
 10220  29. O       .         .         .         .         .         .         .         .         .         .         .         .
 10225  30. O       .         .         .         .         .         .         .         .         .         .         .         .
 10230  31. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32. O       .         .         .         .         .         .         .         .         .         .         .         .
 10240  33. O       .         .         .         .         .         .         .         .         .         .         .         .
 10245  34. O       .         .         .         .         .         .         .         .         .         .         .         .
 10250  35. O       .         .         .         .         .         .         .         .         .         .         .         .
 10255  36. O       .         .         .         .         .         .         .         .         .         .         .         .
 10300  37. O       .         .         .         .         .         .         .         .         .         .         .         .
 10305  38. O       .         .         .         .         .         .         .         .         .         .         .         .
 10310  39. O       .         .         .         .         .         .         .         .         .         .         .         .
 10315  40. O       .         .         .         .         .         .         .         .         .         .         .         .
 10320  41. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42. O       .         .         .         .         .         .         .         .         .         .         .         .
 10330  43. O       .         .         .         .         .         .         .         .         .         .         .         .
 10335  44. O       .         .         .         .         .         .         .         .         .         .         .         .
 10340  45. O       .         .         .         .         .         .         .         .         .         .         .         .
 10345  46. O       .         .         .         .         .         .         .         .         .         .         .         .
 10350  47. O       .         .         .         .         .         .         .         .         .         .         .         .
 10355  48. O       .         .         .         .         .         .         .         .         .         .         .         .
 10400  49. O       .         .         .         .         .         .         .         .         .         .         .         .
 10405  50. O       .         .         .         .         .         .         .         .         .         .         .         .
 10410  51. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52. O       .         .         .         .         .         .         .         .         .         .         .         .
 10420  53. O       .         .         .         .         .         .         .         .         .         .         .         .
 10425  54. O       .         .         .         .         .         .         .         .         .         .         .         .
 10430  55. O       .         .         .         .         .         .         .         .         .         .         .         .
 10435  56. O       .         .         .         .         .         .         .         .         .         .         .         .
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10440  57. O
10445  58. O
10450  59. O
10455  60. O
10500  61. O
10505  62. O
10510  63. O
10515  64. O
10520  65. O
10525  66. O
10530  67. O
10535  68. O
10540  69. O
10545  70. O
10550  71. O
10555  72. O
10600  73. O
10605  74. O
10610  75. O
10615  76. O
10620  77. O
10625  78. O
10630  79. O
10635  80. O
10640  81. O
10645  82. O
10650  83. O
10655  84. O
10700  85. O
10705  86. O
10710  87. O
10715  88. O
10720  89. O
10725  90. O
10730  91. O
10735  92. O
10740  93. O
10745  94. O
10750  95. O
10755  96. O
10800  97. O
10805  98. O
10810  99. O
10815 100. O
10820 101. O
10825 102. O
10830 103. O
10835 104.  O
10840 105.  O
10845 106.  O
10850 107.  O
10855 108.  O
10900 109.  O
10905 110.  O
10910 111. .O
10915 112.  O
10920 113.  O
10925 114.  O
10930 115.  O
10935 116.  O
10940 117.  O
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10945 118.  O      .         .         .         .         .         .         .         .         .         .         .         .
10950 119.  O      .         .         .         .         .         .         .         .         .         .         .         .
10955 120.  O      .         .         .         .         .         .         .         .         .         .         .         .
11000 121. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122.  O      .         .         .         .         .         .         .         .         .         .         .         .
11010 123.  O      .         .         .         .         .         .         .         .         .         .         .         .
11015 124.  O      .         .         .         .         .         .         .         .         .         .         .         .
11020 125.  O      .         .         .         .         .         .         .         .         .         .         .         .
11025 126.  O      .         .         .         .         .         .         .         .         .         .         .         .
11030 127.  O      .         .         .         .         .         .         .         .         .         .         .         .
11035 128.  O      .         .         .         .         .         .         .         .         .         .         .         .
11040 129.  O      .         .         .         .         .         .         .         .         .         .         .         .
11045 130.  O      .         .         .         .         .         .         .         .         .         .         .         .
11050 131. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132.  O      .         .         .         .         .         .         .         .         .         .         .         .
11100 133.  O      .         .         .         .         .         .         .         .         .         .         .         .
11105 134.  O      .         .         .         .         .         .         .         .         .         .         .         .
11110 135.  O      .         .         .         .         .         .         .         .         .         .         .         .
11115 136.  O      .         .         .         .         .         .         .         .         .         .         .         .
11120 137.  O      .         .         .         .         .         .         .         .         .         .         .         .
11125 138.  O      .         .         .         .         .         .         .         .         .         .         .         .
11130 139.  O      .         .         .         .         .         .         .         .         .         .         .         .
11135 140.  O      .         .         .         .         .         .         .         .         .         .         .         .
11140 141. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142.  O      .         .         .         .         .         .         .         .         .         .         .         .
11150 143.  O      .         .         .         .         .         .         .         .         .         .         .         .
11155 144.   O     .         .         .         .         .         .         .         .         .         .         .         .
11200 145.   O     .         .         .         .         .         .         .         .         .         .         .         .
11205 146.   O     .         .         .         .         .         .         .         .         .         .         .         .
11210 147.   O     .         .         .         .         .         .         .         .         .         .         .         .
11215 148.   O     .         .         .         .         .         .         .         .         .         .         .         .
11220 149.   O     .         .         .         .         .         .         .         .         .         .         .         .
11225 150.   O     .         .         .         .         .         .         .         .         .         .         .         .
11230 151. . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11235 152.   O     .         .         .         .         .         .         .         .         .         .         .         .
11240 153.   O     .         .         .         .         .         .         .         .         .         .         .         .
11245 154.   O     .         .         .         .         .         .         .         .         .         .         .         .
11250 155.   O     .         .         .         .         .         .         .         .         .         .         .         .
11255 156.   O     .         .         .         .         .         .         .         .         .         .         .         .
11300 157.   O     .         .         .         .         .         .         .         .         .         .         .         .
11305 158.   O     .         .         .         .         .         .         .         .         .         .         .         .
11310 159.    O    .         .         .         .         .         .         .         .         .         .         .         .
11315 160.    O    .         .         .         .         .         .         .         .         .         .         .         .
11320 161. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11325 162.    O    .         .         .         .         .         .         .         .         .         .         .         .
11330 163.    O    .         .         .         .         .         .         .         .         .         .         .         .
11335 164.    O    .         .         .         .         .         .         .         .         .         .         .         .
11340 165.    O    .         .         .         .         .         .         .         .         .         .         .         .
11345 166.    O    .         .         .         .         .         .         .         .         .         .         .         .
11350 167.    O    .         .         .         .         .         .         .         .         .         .         .         .
11355 168.    O    .         .         .         .         .         .         .         .         .         .         .         .
11400 169.    O    .         .         .         .         .         .         .         .         .         .         .         .
11405 170.     O   .         .         .         .         .         .         .         .         .         .         .         .
11410 171. . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11415 172.     O   .         .         .         .         .         .         .         .         .         .         .         .
11420 173.     O   .         .         .         .         .         .         .         .         .         .         .         .
11425 174.     O   .         .         .         .         .         .         .         .         .         .         .         .
11430 175.     O   .         .         .         .         .         .         .         .         .         .         .         .
11435 176.      O  .         .         .         .         .         .         .         .         .         .         .         .
11440 177.      O  .         .         .         .         .         .         .         .         .         .         .         .
11445 178.      O  .         .         .         .         .         .         .         .         .         .         .         .
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11450 179.      O  .         .         .         .         .         .         .         .         .         .         .
11455 180.      O  .         .         .         .         .         .         .         .         .         .         .
11500 181. . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.       O .         .         .         .         .         .         .         .         .         .         .
11510 183.       O .         .         .         .         .         .         .         .         .         .         .
11515 184.        O.         .         .         .         .         .         .         .         .         .         .
11520 185.        O.         .         .         .         .         .         .         .         .         .         .
11525 186.         O         .         .         .         .         .         .         .         .         .         .
11530 187.         . O       .         .         .         .         .         .         .         .         .         .
11535 188.         . O       .         .         .         .         .         .         .         .         .         .
11540 189.         .   O     .         .         .         .         .         .         .         .         .         .
11545 190.         .    O    .         .         .         .         .         .         .         .         .         .
11550 191. . . . . . . . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.         .         . O       .         .         .         .         .         .         .         .         .
11600 193.         .         .     O   .         .         .         .         .         .         .         .         .
11605 194.         .         .         .         .         .O        .         .         .         .         .         .
11610 195.         .         .         .         .         .         .         .         .    O    .         .         .
11615 196.         .         .         .    O    .         .         .         .         .         .         .         .
11620 197.         .      O  .         .         .         .         .         .         .         .         .         .
11625 198.         .  O      .         .         .         .         .         .         .         .         .         .
11630 199.        O         .         .         .         .         .         .         .         .         .         .
11635 200.        O.         .         .         .         .         .         .         .         .         .         .
11640 201. . . . O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.       O .         .         .         .         .         .         .         .         .         .         .
11650 203.      O  .         .         .         .         .         .         .         .         .         .         .
11655 204.      O  .         .         .         .         .         .         .         .         .         .         .
11700 205.     O   .         .         .         .         .         .         .         .         .         .         .
11705 206.     O   .         .         .         .         .         .         .         .         .         .         .
11710 207.     O   .         .         .         .         .         .         .         .         .         .         .
11715 208.    O    .         .         .         .         .         .         .         .         .         .         .
11720 209.    O    .         .         .         .         .         .         .         .         .         .         .
11725 210.    O    .         .         .         .         .         .         .         .         .         .         .
11730 211. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.    O    .         .         .         .         .         .         .         .         .         .         .
11740 213.    O    .         .         .         .         .         .         .         .         .         .         .
11745 214.   O     .         .         .         .         .         .         .         .         .         .         .
11750 215.   O     .         .         .         .         .         .         .         .         .         .         .
11755 216.   O     .         .         .         .         .         .         .         .         .         .         .
11800 217.   O     .         .         .         .         .         .         .         .         .         .         .
11805 218.   O     .         .         .         .         .         .         .         .         .         .         .
11810 219.   O     .         .         .         .         .         .         .         .         .         .         .
11815 220.   O     .         .         .         .         .         .         .         .         .         .         .
11820 221. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.  O      .         .         .         .         .         .         .         .         .         .         .
11830 223.  O      .         .         .         .         .         .         .         .         .         .         .
11835 224.  O      .         .         .         .         .         .         .         .         .         .         .
11840 225.  O      .         .         .         .         .         .         .         .         .         .         .
11845 226.  O      .         .         .         .         .         .         .         .         .         .         .
11850 227.  O      .         .         .         .         .         .         .         .         .         .         .
11855 228.  O      .         .         .         .         .         .         .         .         .         .         .
11900 229.  O      .         .         .         .         .         .         .         .         .         .         .
11905 230.  O      .         .         .         .         .         .         .         .         .         .         .
11910 231. .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.  O      .         .         .         .         .         .         .         .         .         .         .
11920 233.  O      .         .         .         .         .         .         .         .         .         .         .
11925 234.  O      .         .         .         .         .         .         .         .         .         .         .
11930 235.  O      .         .         .         .         .         .         .         .         .         .         .
11935 236.  O      .         .         .         .         .         .         .         .         .         .         .
11940 237.  O      .         .         .         .         .         .         .         .         .         .         .
11945 238.  O      .         .         .         .         .         .         .         .         .         .         .
11950 239.  O      .         .         .         .         .         .         .         .         .         .         .
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11955 240.  O      .         .         .         .         .         .         .         .         .         .         .         .
12000 241. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242. O       .         .         .         .         .         .         .         .         .         .         .         .
12010 243. O       .         .         .         .         .         .         .         .         .         .         .         .
12015 244. O       .         .         .         .         .         .         .         .         .         .         .         .
12020 245. O       .         .         .         .         .         .         .         .         .         .         .         .
12025 246. O       .         .         .         .         .         .         .         .         .         .         .         .
12030 247. O       .         .         .         .         .         .         .         .         .         .         .         .
12035 248. O       .         .         .         .         .         .         .         .         .         .         .         .
12040 249. O       .         .         .         .         .         .         .         .         .         .         .         .
12045 250. O       .         .         .         .         .         .         .         .         .         .         .         .
12050 251. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252. O       .         .         .         .         .         .         .         .         .         .         .         .
12100 253. O       .         .         .         .         .         .         .         .         .         .         .         .
12105 254. O       .         .         .         .         .         .         .         .         .         .         .         .
12110 255. O       .         .         .         .         .         .         .         .         .         .         .         .
12115 256. O       .         .         .         .         .         .         .         .         .         .         .         .
12120 257. O       .         .         .         .         .         .         .         .         .         .         .         .
12125 258. O       .         .         .         .         .         .         .         .         .         .         .         .
12130 259. O       .         .         .         .         .         .         .         .         .         .         .         .
12135 260. O       .         .         .         .         .         .         .         .         .         .         .         .
12140 261. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262. O       .         .         .         .         .         .         .         .         .         .         .         .
12150 263. O       .         .         .         .         .         .         .         .         .         .         .         .
12155 264. O       .         .         .         .         .         .         .         .         .         .         .         .
12200 265. O       .         .         .         .         .         .         .         .         .         .         .         .
12205 266. O       .         .         .         .         .         .         .         .         .         .         .         .
12210 267. O       .         .         .         .         .         .         .         .         .         .         .         .
12215 268. O       .         .         .         .         .         .         .         .         .         .         .         .
12220 269. O       .         .         .         .         .         .         .         .         .         .         .         .
12225 270. O       .         .         .         .         .         .         .         .         .         .         .         .
12230 271. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272. O       .         .         .         .         .         .         .         .         .         .         .         .
12240 273. O       .         .         .         .         .         .         .         .         .         .         .         .
12245 274. O       .         .         .         .         .         .         .         .         .         .         .         .
12250 275. O       .         .         .         .         .         .         .         .         .         .         .         .
12255 276. O       .         .         .         .         .         .         .         .         .         .         .         .
12300 277. O       .         .         .         .         .         .         .         .         .         .         .         .
12305 278. O       .         .         .         .         .         .         .         .         .         .         .         .
12310 279. O       .         .         .         .         .         .         .         .         .         .         .         .
12315 280. O       .         .         .         .         .         .         .         .         .         .         .         .
12320 281. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282. O       .         .         .         .         .         .         .         .         .         .         .         .
12330 283. O       .         .         .         .         .         .         .         .         .         .         .         .
12335 284. O       .         .         .         .         .         .         .         .         .         .         .         .
12340 285. O       .         .         .         .         .         .         .         .         .         .         .         .
12345 286. O       .         .         .         .         .         .         .         .         .         .         .         .
12350 287. O       .         .         .         .         .         .         .         .         .         .         .         .
12355 288. O       .         .         .         .         .         .         .         .         .         .         .         .
20000 289. O       .         .         .         .         .         .         .         .         .         .         .         .
20005 290. O       .         .         .         .         .         .         .         .         .         .         .         .
20010 291. O . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
20015 292O         .         .         .         .         .         .         .         .         .         .         .         .
20020 293O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
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            *            *
 39 KK      *  UND_STOR  *
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               HYDROGRAPH ROUTING DATA

 40 RS           STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC         .00  INITIAL CONDITION
                          X         .00 WORKING R AND D COEFFICIENT

 41 SV             STORAGE          .0        .0        .1        .1        .1        .2        .2        .3        .3        .4
                                    .4        .5        .5

 43 SQ           DISCHARGE          0.        0.        0.        0.        0.        0.        0.        0.        0.        3.
                                    5.        7.        8.

 45 SE           ELEVATION       22.50     23.00     23.50     24.00     24.50     25.00     25.50     26.00     26.50     27.00
                                 27.50     28.00     28.50
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HYDROGRAPH AT STATION UND_STOR

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	22.5	1		0810	99	0.	.1	23.5	1		1620	197	7.	.5	28.0
1		0005	2	0.	.0	22.5	1		0815	100	0.	.1	23.6	1		1625	198	6.	.4	27.8
1		0010	3	0.	.0	22.5	1		0820	101	0.	.1	23.6	1		1630	199	5.	.4	27.5
1		0015	4	0.	.0	22.5	1		0825	102	0.	.1	23.6	1		1635	200	4.	.4	27.3
1		0020	5	0.	.0	22.5	1		0830	103	0.	.1	23.6	1		1640	201	4.	.4	27.1
1		0025	6	0.	.0	22.5	1		0835	104	0.	.1	23.6	1		1645	202	3.	.4	27.0
1		0030	7	0.	.0	22.5	1		0840	105	0.	.1	23.7	1		1650	203	3.	.4	26.9
1		0035	8	0.	.0	22.5	1		0845	106	0.	.1	23.7	1		1655	204	2.	.4	26.8
1		0040	9	0.	.0	22.5	1		0850	107	0.	.1	23.7	1		1700	205	2.	.4	26.8
1		0045	10	0.	.0	22.5	1		0855	108	0.	.1	23.7	1		1705	206	2.	.3	26.7
1		0050	11	0.	.0	22.5	1		0900	109	0.	.1	23.7	1		1710	207	1.	.3	26.7
1		0055	12	0.	.0	22.5	1		0905	110	0.	.1	23.8	1		1715	208	1.	.3	26.7
1		0100	13	0.	.0	22.5	1		0910	111	0.	.1	23.8	1		1720	209	1.	.3	26.7
1		0105	14	0.	.0	22.5	1		0915	112	0.	.1	23.8	1		1725	210	1.	.3	26.7
1		0110	15	0.	.0	22.5	1		0920	113	0.	.1	23.8	1		1730	211	1.	.3	26.6
1		0115	16	0.	.0	22.5	1		0925	114	0.	.1	23.8	1		1735	212	1.	.3	26.6
1		0120	17	0.	.0	22.5	1		0930	115	0.	.1	23.9	1		1740	213	1.	.3	26.6
1		0125	18	0.	.0	22.5	1		0935	116	0.	.1	23.9	1		1745	214	1.	.3	26.6
1		0130	19	0.	.0	22.5	1		0940	117	0.	.1	23.9	1		1750	215	1.	.3	26.6
1		0135	20	0.	.0	22.5	1		0945	118	0.	.1	23.9	1		1755	216	1.	.3	26.6
1		0140	21	0.	.0	22.5	1		0950	119	0.	.1	24.0	1		1800	217	1.	.3	26.6

1	0145	22	0.	.0	22.6	*	1	0955	120	0.	.1	24.0	*	1	1805	218	1.	.3	26.6
1	0150	23	0.	.0	22.6	*	1	1000	121	0.	.1	24.0	*	1	1810	219	1.	.3	26.6
1	0155	24	0.	.0	22.6	*	1	1005	122	0.	.1	24.0	*	1	1815	220	1.	.3	26.6
1	0200	25	0.	.0	22.6	*	1	1010	123	0.	.1	24.1	*	1	1820	221	1.	.3	26.6
1	0205	26	0.	.0	22.6	*	1	1015	124	0.	.1	24.1	*	1	1825	222	1.	.3	26.6
1	0210	27	0.	.0	22.6	*	1	1020	125	0.	.1	24.1	*	1	1830	223	1.	.3	26.6
1	0215	28	0.	.0	22.6	*	1	1025	126	0.	.1	24.1	*	1	1835	224	1.	.3	26.6
1	0220	29	0.	.0	22.6	*	1	1030	127	0.	.1	24.1	*	1	1840	225	1.	.3	26.6
1	0225	30	0.	.0	22.6	*	1	1035	128	0.	.1	24.2	*	1	1845	226	1.	.3	26.6
1	0230	31	0.	.0	22.6	*	1	1040	129	0.	.1	24.2	*	1	1850	227	1.	.3	26.6
1	0235	32	0.	.0	22.6	*	1	1045	130	0.	.1	24.2	*	1	1855	228	1.	.3	26.6
1	0240	33	0.	.0	22.6	*	1	1050	131	0.	.1	24.2	*	1	1900	229	1.	.3	26.6
1	0245	34	0.	.0	22.6	*	1	1055	132	0.	.1	24.3	*	1	1905	230	1.	.3	26.6
1	0250	35	0.	.0	22.6	*	1	1100	133	0.	.1	24.3	*	1	1910	231	1.	.3	26.6
1	0255	36	0.	.0	22.6	*	1	1105	134	0.	.1	24.3	*	1	1915	232	1.	.3	26.6
1	0300	37	0.	.0	22.7	*	1	1110	135	0.	.1	24.3	*	1	1920	233	1.	.3	26.5
1	0305	38	0.	.0	22.7	*	1	1115	136	0.	.1	24.4	*	1	1925	234	1.	.3	26.5
1	0310	39	0.	.0	22.7	*	1	1120	137	0.	.1	24.4	*	1	1930	235	1.	.3	26.5
1	0315	40	0.	.0	22.7	*	1	1125	138	0.	.1	24.4	*	1	1935	236	1.	.3	26.5
1	0320	41	0.	.0	22.7	*	1	1130	139	0.	.1	24.4	*	1	1940	237	1.	.3	26.5
1	0325	42	0.	.0	22.7	*	1	1135	140	0.	.1	24.5	*	1	1945	238	1.	.3	26.5
1	0330	43	0.	.0	22.7	*	1	1140	141	0.	.1	24.5	*	1	1950	239	1.	.3	26.5
1	0335	44	0.	.0	22.7	*	1	1145	142	0.	.1	24.5	*	1	1955	240	1.	.3	26.5
1	0340	45	0.	.0	22.7	*	1	1150	143	0.	.1	24.6	*	1	2000	241	1.	.3	26.5
1	0345	46	0.	.0	22.7	*	1	1155	144	0.	.1	24.6	*	1	2005	242	1.	.3	26.5
1	0350	47	0.	.0	22.7	*	1	1200	145	0.	.1	24.6	*	1	2010	243	1.	.3	26.5
1	0355	48	0.	.0	22.7	*	1	1205	146	0.	.1	24.7	*	1	2015	244	0.	.3	26.5
1	0400	49	0.	.0	22.8	*	1	1210	147	0.	.1	24.7	*	1	2020	245	0.	.3	26.5
1	0405	50	0.	.0	22.8	*	1	1215	148	0.	.2	24.7	*	1	2025	246	0.	.3	26.5
1	0410	51	0.	.0	22.8	*	1	1220	149	0.	.2	24.8	*	1	2030	247	0.	.3	26.5
1	0415	52	0.	.0	22.8	*	1	1225	150	0.	.2	24.8	*	1	2035	248	0.	.3	26.5
1	0420	53	0.	.0	22.8	*	1	1230	151	0.	.2	24.8	*	1	2040	249	0.	.3	26.5
1	0425	54	0.	.0	22.8	*	1	1235	152	0.	.2	24.9	*	1	2045	250	0.	.3	26.5
1	0430	55	0.	.0	22.8	*	1	1240	153	0.	.2	24.9	*	1	2050	251	0.	.3	26.5
1	0435	56	0.	.0	22.8	*	1	1245	154	0.	.2	25.0	*	1	2055	252	0.	.3	26.5
1	0440	57	0.	.0	22.8	*	1	1250	155	0.	.2	25.0	*	1	2100	253	0.	.3	26.5
1	0445	58	0.	.0	22.9	*	1	1255	156	0.	.2	25.0	*	1	2105	254	0.	.3	26.5
1	0450	59	0.	.0	22.9	*	1	1300	157	0.	.2	25.1	*	1	2110	255	0.	.3	26.5
1	0455	60	0.	.0	22.9	*	1	1305	158	0.	.2	25.1	*	1	2115	256	0.	.3	26.5
1	0500	61	0.	.0	22.9	*	1	1310	159	0.	.2	25.2	*	1	2120	257	0.	.3	26.5
1	0505	62	0.	.0	22.9	*	1	1315	160	0.	.2	25.2	*	1	2125	258	0.	.3	26.5
1	0510	63	0.	.0	22.9	*	1	1320	161	0.	.2	25.2	*	1	2130	259	0.	.3	26.5
1	0515	64	0.	.0	22.9	*	1	1325	162	0.	.2	25.3	*	1	2135	260	0.	.3	26.5
1	0520	65	0.	.0	22.9	*	1	1330	163	0.	.2	25.3	*	1	2140	261	0.	.3	26.5
1	0525	66	0.	.0	23.0	*	1	1335	164	0.	.2	25.4	*	1	2145	262	0.	.3	26.5
1	0530	67	0.	.0	23.0	*	1	1340	165	0.	.2	25.4	*	1	2150	263	0.	.3	26.5
1	0535	68	0.	.0	23.0	*	1	1345	166	0.	.2	25.5	*	1	2155	264	0.	.3	26.5
1	0540	69	0.	.0	23.0	*	1	1350	167	0.	.2	25.5	*	1	2200	265	0.	.3	26.5
1	0545	70	0.	.0	23.0	*	1	1355	168	0.	.2	25.6	*	1	2205	266	0.	.3	26.5
1	0550	71	0.	.0	23.0	*	1	1400	169	0.	.2	25.6	*	1	2210	267	0.	.3	26.5
1	0555	72	0.	.0	23.0	*	1	1405	170	0.	.2	25.7	*	1	2215	268	0.	.3	26.5
1	0600	73	0.	.0	23.1	*	1	1410	171	0.	.3	25.7	*	1	2220	269	0.	.3	26.5
1	0605	74	0.	.0	23.1	*	1	1415	172	0.	.3	25.8	*	1	2225	270	0.	.3	26.5
1	0610	75	0.	.0	23.1	*	1	1420	173	0.	.3	25.9	*	1	2230	271	0.	.3	26.5
1	0615	76	0.	.0	23.1	*	1	1425	174	0.	.3	25.9	*	1	2235	272	0.	.3	26.5
1	0620	77	0.	.0	23.1	*	1	1430	175	0.	.3	26.0	*	1	2240	273	0.	.3	26.5
1	0625	78	0.	.0	23.1	*	1	1435	176	0.	.3	26.1	*	1	2245	274	0.	.3	26.5
1	0630	79	0.	.0	23.2	*	1	1440	177	0.	.3	26.1	*	1	2250	275	0.	.3	26.5
1	0635	80	0.	.0	23.2	*	1	1445	178	0.	.3	26.2	*	1	2255	276	0.	.3	26.5
1	0640	81	0.	.0	23.2	*	1	1450	179	0.	.3	26.3	*	1	2300	277	0.	.3	26.5
1	0645	82	0.	.0	23.2	*	1	1455	180	0.	.3	26.4	*	1	2305	278	0.	.3	26.5

1	0650	83	0.	.0	23.2	*	1	1500	181	0.	.3	26.5	*	1	2310	279	0.	.3	26.5
1	0655	84	0.	.0	23.2	*	1	1505	182	1.	.3	26.5	*	1	2315	280	0.	.3	26.5
1	0700	85	0.	.0	23.3	*	1	1510	183	1.	.3	26.6	*	1	2320	281	0.	.3	26.5
1	0705	86	0.	.0	23.3	*	1	1515	184	1.	.3	26.7	*	1	2325	282	0.	.3	26.5
1	0710	87	0.	.0	23.3	*	1	1520	185	1.	.3	26.7	*	1	2330	283	0.	.3	26.5
1	0715	88	0.	.0	23.3	*	1	1525	186	2.	.3	26.7	*	1	2335	284	0.	.3	26.5
1	0720	89	0.	.0	23.3	*	1	1530	187	2.	.3	26.8	*	1	2340	285	0.	.3	26.5
1	0725	90	0.	.0	23.4	*	1	1535	188	2.	.4	26.8	*	1	2345	286	0.	.3	26.5
1	0730	91	0.	.0	23.4	*	1	1540	189	2.	.4	26.8	*	1	2350	287	0.	.3	26.5
1	0735	92	0.	.0	23.4	*	1	1545	190	2.	.4	26.9	*	1	2355	288	0.	.3	26.5
1	0740	93	0.	.0	23.4	*	1	1550	191	3.	.4	26.9	*	2	0000	289	0.	.3	26.5
1	0745	94	0.	.0	23.4	*	1	1555	192	3.	.4	27.0	*	2	0005	290	0.	.3	26.5
1	0750	95	0.	.1	23.5	*	1	1600	193	4.	.4	27.1	*	2	0010	291	0.	.3	26.5
1	0755	96	0.	.1	23.5	*	1	1605	194	4.	.4	27.3	*	2	0015	292	0.	.3	26.5
1	0800	97	0.	.1	23.5	*	1	1610	195	6.	.4	27.8	*	2	0020	293	0.	.3	26.5
1	0805	98	0.	.1	23.5	*	1	1615	196	7.	.5	28.2	*						
						*							*						

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  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.33-HR
+   (CFS)       (HR)
                          (CFS)
+       7.     16.25                 2.          1.          1.           1.
                         (INCHES)    1.756       2.855       2.875        2.875
                          (AC-FT)      1.          1.          1.           1.

 PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.33-HR
+  (AC-FT)      (HR)
       0.     16.25                   0.          0.          0.           0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.33-HR
+   (FEET)      (HR)
     28.21     16.25                26.74       24.85       24.81        24.81

                         CUMULATIVE AREA =     .01 SQ MI
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1 STATION UND_STOR

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                    (I) INFLOW,   (O) OUTFLOW
        0.       2.       4.       6.       8.      10.      12.      14.      16.       0.       0.       0.       0.
                                                                                  (S) STORAGE
        .0       .0       .0       .0       .0       .0       .0       .2       .4       .6       .0       .0       .0
DAHRMN PER
 10000   1I-O-------.---------.---------.---------.---------.---------S---------.---------.---------.---------.---------.---------.
 10005   2I O       .         .         .         .         .         S         .         .         .         .         .         .
 10010   3.IO       .         .         .         .         .         S         .         .         .         .         .         .
 10015   4. I       .         .         .         .         .         S         .         .         .         .         .         .
 10020   5. I       .         .         .         .         .         S         .         .         .         .         .         .
 10025   6. I       .         .         .         .         .         S         .         .         .         .         .         .
 10030   7. I       .         .         .         .         .         S         .         .         .         .         .         .
 10035   8. I       .         .         .         .         .         S         .         .         .         .         .         .
 10040   9. I       .         .         .         .         .         S         .         .         .         .         .         .
 10045  10. I       .         .         .         .         .         S         .         .         .         .         .         .
 10050  11. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  12. I       .         .         .         .         .         S         .         .         .         .         .         .
 10100  13. I       .         .         .         .         .         S         .         .         .         .         .         .
 10105  14. I       .         .         .         .         .         S         .         .         .         .         .         .
 10110  15. I       .         .         .         .         .         S         .         .         .         .         .         .
 10115  16. I       .         .         .         .         .         S         .         .         .         .         .         .
 10120  17. I       .         .         .         .         .         S         .         .         .         .         .         .
 10125  18. I       .         .         .         .         .         S         .         .         .         .         .         .
 10130  19. I       .         .         .         .         .         S         .         .         .         .         .         .
 10135  20. I       .         .         .         .         .         S         .         .         .         .         .         .
 10140  21. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10145  22. I       .         .         .         .         .         S         .         .         .         .         .         .
 10150  23. I       .         .         .         .         .         S         .         .         .         .         .         .
 10155  24. I       .         .         .         .         .         S         .         .         .         .         .         .
 10200  25. I       .         .         .         .         .         S         .         .         .         .         .         .
 10205  26. I       .         .         .         .         .         S         .         .         .         .         .         .
 10210  27. I       .         .         .         .         .         S         .         .         .         .         .         .
 10215  28. I       .         .         .         .         .         S         .         .         .         .         .         .
 10220  29. I       .         .         .         .         .         S         .         .         .         .         .         .
 10225  30. I       .         .         .         .         .         S         .         .         .         .         .         .
 10230  31. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32. I       .         .         .         .         .         S         .         .         .         .         .         .
 10240  33. I       .         .         .         .         .         S         .         .         .         .         .         .
 10245  34. I       .         .         .         .         .         S         .         .         .         .         .         .
 10250  35. I       .         .         .         .         .         S         .         .         .         .         .         .
 10255  36. I       .         .         .         .         .         S         .         .         .         .         .         .
 10300  37. I       .         .         .         .         .         S         .         .         .         .         .         .
 10305  38. I       .         .         .         .         .         S         .         .         .         .         .         .
 10310  39. I       .         .         .         .         .         S         .         .         .         .         .         .
 10315  40. I       .         .         .         .         .         S         .         .         .         .         .         .
 10320  41. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10330  43. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10335  44. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10340  45. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10345  46. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10350  47. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10355  48. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10400  49. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10405  50. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10410  51. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10420  53. I       .         .         .         .         .         .S        .         .         .         .         .         .
 10425  54. I       .         .         .         .         .         .S        .         .         .         .         .         .
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10430  55. I       .         .         .         .         .         .S        .         .         .         .         .         .
10435  56. I       .         .         .         .         .         .S        .         .         .         .         .         .
10440  57. I       .         .         .         .         .         .S        .         .         .         .         .         .
10445  58. I       .         .         .         .         .         .S        .         .         .         .         .         .
10450  59. I       .         .         .         .         .         .S        .         .         .         .         .         .
10455  60. I       .         .         .         .         .         .S        .         .         .         .         .         .
10500  61. I . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10505  62. I       .         .         .         .         .         .S        .         .         .         .         .         .
10510  63. I       .         .         .         .         .         .S        .         .         .         .         .         .
10515  64. I       .         .         .         .         .         .S        .         .         .         .         .         .
10520  65. I       .         .         .         .         .         .S        .         .         .         .         .         .
10525  66. I       .         .         .         .         .         .S        .         .         .         .         .         .
10530  67. I       .         .         .         .         .         .S        .         .         .         .         .         .
10535  68. I       .         .         .         .         .         .S        .         .         .         .         .         .
10540  69. I       .         .         .         .         .         .S        .         .         .         .         .         .
10545  70. I       .         .         .         .         .         .S        .         .         .         .         .         .
10550  71. I . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10555  72. I       .         .         .         .         .         .S        .         .         .         .         .         .
10600  73. I       .         .         .         .         .         .S        .         .         .         .         .         .
10605  74. I       .         .         .         .         .         . S       .         .         .         .         .         .
10610  75. I       .         .         .         .         .         . S       .         .         .         .         .         .
10615  76. I       .         .         .         .         .         . S       .         .         .         .         .         .
10620  77. I       .         .         .         .         .         . S       .         .         .         .         .         .
10625  78. I       .         .         .         .         .         . S       .         .         .         .         .         .
10630  79. I       .         .         .         .         .         . S       .         .         .         .         .         .
10635  80. I       .         .         .         .         .         . S       .         .         .         .         .         .
10640  81. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10645  82. I       .         .         .         .         .         . S       .         .         .         .         .         .
10650  83. I       .         .         .         .         .         . S       .         .         .         .         .         .
10655  84. I       .         .         .         .         .         . S       .         .         .         .         .         .
10700  85. I       .         .         .         .         .         . S       .         .         .         .         .         .
10705  86. I       .         .         .         .         .         . S       .         .         .         .         .         .
10710  87. I       .         .         .         .         .         . S       .         .         .         .         .         .
10715  88. I       .         .         .         .         .         . S       .         .         .         .         .         .
10720  89. I       .         .         .         .         .         . S       .         .         .         .         .         .
10725  90. I       .         .         .         .         .         . S       .         .         .         .         .         .
10730  91. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735  92. I       .         .         .         .         .         . S       .         .         .         .         .         .
10740  93. I       .         .         .         .         .         . S       .         .         .         .         .         .
10745  94. I       .         .         .         .         .         . S       .         .         .         .         .         .
10750  95. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10755  96. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10800  97. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10805  98. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10810  99. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10815 100. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10820 101. I . . . . . . . . . . . . . . . . . . . . . . . . . . . .  S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10825 102. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10830 103. I       .         .         .         .         .         .  S      .         .         .         .         .         .
10835 104. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
10840 105. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
10845 106. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
10850 107. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
10855 108. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
10900 109. OI      .         .         .         .         .         .  S      .         .         .         .         .         .
10905 110. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10910 111. OI. . . . . . . . . . . . . . . . . . . . . . . . . . . .  S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10915 112. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10920 113. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10925 114. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10930 115. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
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10935 116. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10940 117. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10945 118. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10950 119. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
10955 120. OI      .         .         .         .         .         .   S     .         .         .         .         .         .
11000 121. OI. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11010 123. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11015 124. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11020 125. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11025 126. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11030 127. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11035 128. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11040 129. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11045 130. OI      .         .         .         .         .         .    S    .         .         .         .         .         .
11050 131. OI. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11100 133. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11105 134. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11110 135. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11115 136. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11120 137. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11125 138. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11130 139. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11135 140. OI      .         .         .         .         .         .     S   .         .         .         .         .         .
11140 141. OI. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142. OI      .         .         .         .         .         .      S  .         .         .         .         .         .
11150 143. OI      .         .         .         .         .         .      S  .         .         .         .         .         .
11155 144. O I     .         .         .         .         .         .      S  .         .         .         .         .         .
11200 145. O I     .         .         .         .         .         .      S  .         .         .         .         .         .
11205 146. O I     .         .         .         .         .         .      S  .         .         .         .         .         .
11210 147. O I     .         .         .         .         .         .      S  .         .         .         .         .         .
11215 148. O I     .         .         .         .         .         .       S .         .         .         .         .         .
11220 149. O I     .         .         .         .         .         .       S .         .         .         .         .         .
11225 150. O I     .         .         .         .         .         .       S .         .         .         .         .         .
11230 151. O I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11235 152. O I     .         .         .         .         .         .       S .         .         .         .         .         .
11240 153. O I     .         .         .         .         .         .       S .         .         .         .         .         .
11245 154. O I     .         .         .         .         .         .        S.         .         .         .         .         .
11250 155. O I     .         .         .         .         .         .        S.         .         .         .         .         .
11255 156. O I     .         .         .         .         .         .        S.         .         .         .         .         .
11300 157. O I     .         .         .         .         .         .        S.         .         .         .         .         .
11305 158. O I     .         .         .         .         .         .        S.         .         .         .         .         .
11310 159. O  I    .         .         .         .         .         .         S         .         .         .         .         .
11315 160. O  I    .         .         .         .         .         .         S         .         .         .         .         .
11320 161. O .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11325 162. O  I    .         .         .         .         .         .         S         .         .         .         .         .
11330 163. O  I    .         .         .         .         .         .         S         .         .         .         .         .
11335 164. O  I    .         .         .         .         .         .         .S        .         .         .         .         .
11340 165. O  I    .         .         .         .         .         .         .S        .         .         .         .         .
11345 166. O  I    .         .         .         .         .         .         .S        .         .         .         .         .
11350 167. O  I    .         .         .         .         .         .         .S        .         .         .         .         .
11355 168. O  I    .         .         .         .         .         .         . S       .         .         .         .         .
11400 169. O  I    .         .         .         .         .         .         . S       .         .         .         .         .
11405 170. O   I   .         .         .         .         .         .         . S       .         .         .         .         .
11410 171. O . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11415 172. O   I   .         .         .         .         .         .         .  S      .         .         .         .         .
11420 173. O   I   .         .         .         .         .         .         .  S      .         .         .         .         .
11425 174. O   I   .         .         .         .         .         .         .  S      .         .         .         .         .
11430 175. O   I   .         .         .         .         .         .         .   S     .         .         .         .         .
11435 176. O    I  .         .         .         .         .         .         .   S     .         .         .         .         .
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11440 177. O    I  .         .         .         .         .         .         .   S     .         .         .         .         .
11445 178. O    I  .         .         .         .         .         .         .    S    .         .         .         .         .
11450 179. O    I  .         .         .         .         .         .         .    S    .         .         .         .         .
11455 180. O    I  .         .         .         .         .         .         .     S   .         .         .         .         .
11500 181. O . . I . . .
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11945 238.  I      .         .         .         .         .         .         .    S   .         .         .         .         .
11950 239.  I      .         .         .         .         .         .         .    S   .         .         .         .         .
11955 240.  I      .         .         .         .         .         .         .    S   .         .         .         .         .
12000 241. IO. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12005 242. IO      .         .         .         .         .         .         .    S   .         .         .         .         .
12010 243. IO      .         .         .         .         .         .         .    S   .         .         .         .         .
12015 244. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12020 245. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12025 246. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12030 247. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12035 248. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12040 249. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12045 250. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12050 251. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12055 252. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12100 253. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12105 254. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12110 255. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12115 256. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12120 257. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12125 258. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12130 259. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12135 260. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12140 261. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12145 262. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12150 263. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12155 264. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12200 265. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12205 266. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12210 267. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12215 268. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12220 269. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12225 270. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12230 271. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12235 272. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12240 273. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12245 274. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12250 275. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12255 276. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12300 277. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12305 278. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12310 279. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12315 280. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12320 281. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
12325 282. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12330 283. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12335 284. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12340 285. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12345 286. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12350 287. I       .         .         .         .         .         .         .    S   .         .         .         .         .
12355 288. I       .         .         .         .         .         .         .    S   .         .         .         .         .
20000 289. I       .         .         .         .         .         .         .    S   .         .         .         .         .
20005 290. I       .         .         .         .         .         .         .    S   .         .         .         .         .
20010 291. I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . .
20015 292I O       .         .         .         .         .         .         .    S   .         .         .         .         .
20020 293I-O-------.---------.---------.---------.---------.---------.---------.----S---.---------.---------.---------.---------.
```

1

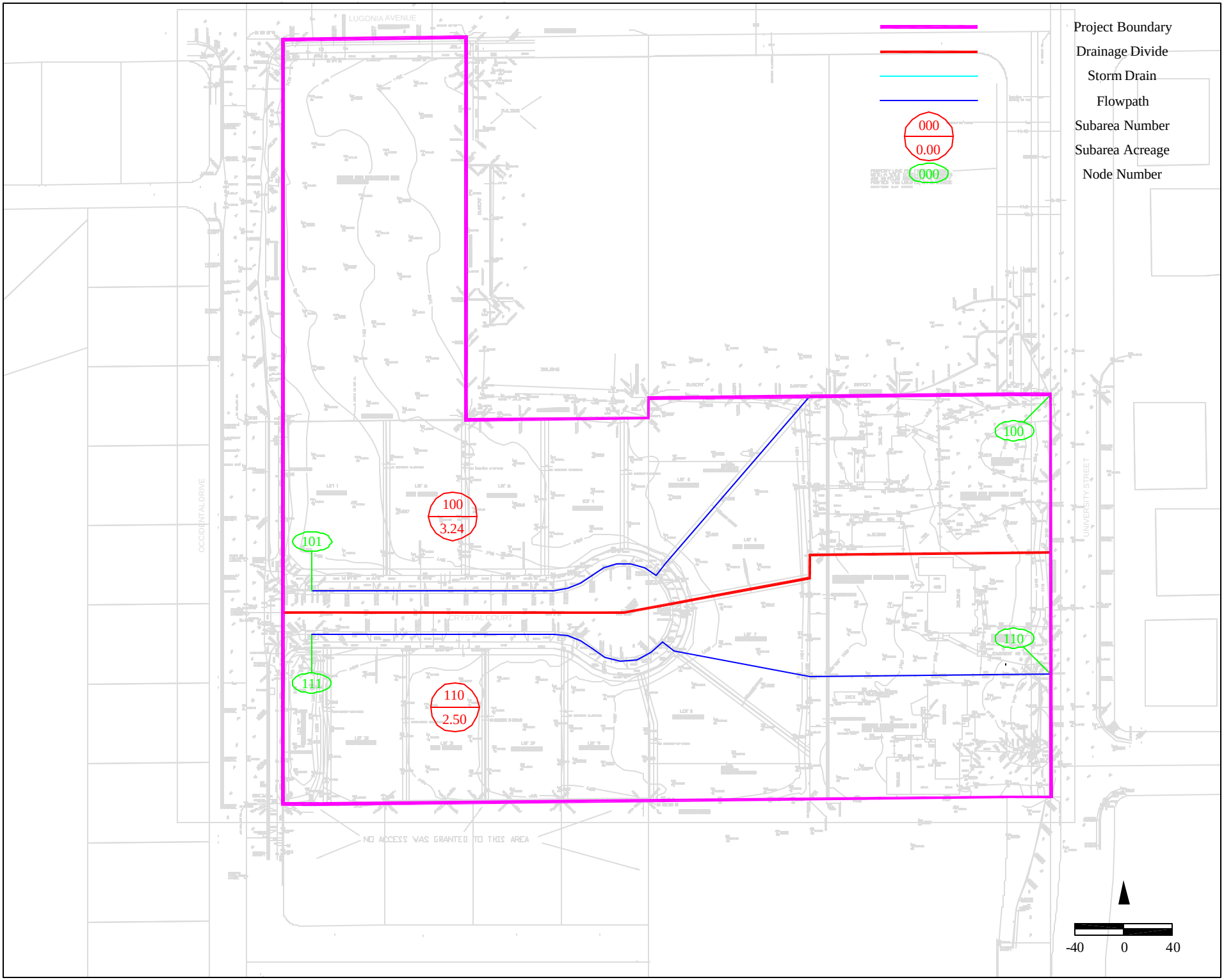
RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB_AREA	15.	16.17	2.	1.	1.	.01		
+	ROUTED TO	UND_STOR	7.	16.25	2.	1.	1.	.01		
+									28.21	16.25

*** NORMAL END OF HEC-1 ***

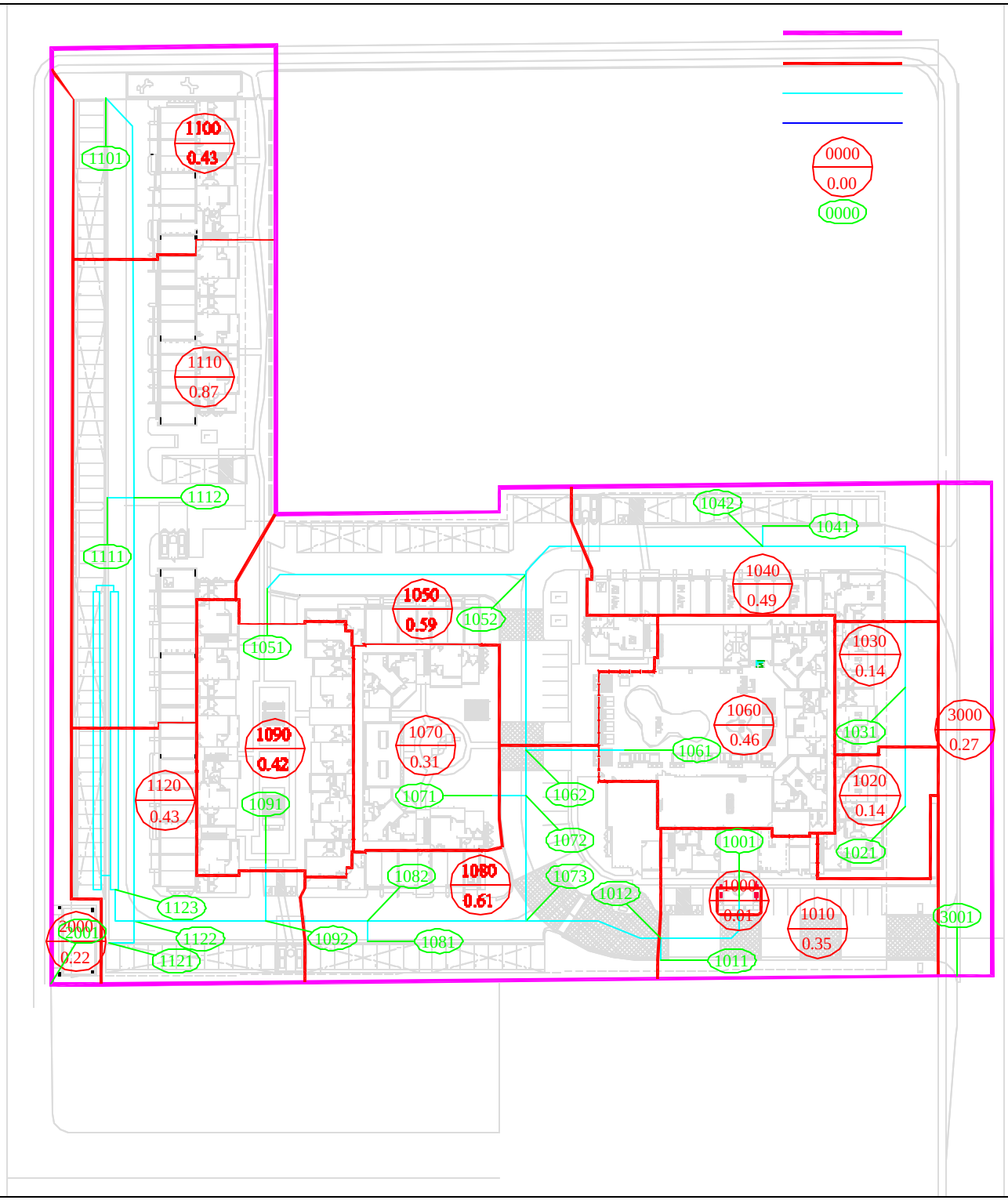
Technical Appendix E

Hydrology Map
Existing Condition


Project Boundary
Drainage Divide
Storm Drain
Flowpath
Subarea Number
Subarea Acreage
Node Number
000
0.00
000
100
3.24
110
2.50
100
101
110
111
LUGONIA AVENUE
OCCIDENTAL DRIVE
CRYSTAL COURT
UNIVERSITY STREET
NO ACCESS WAS GRANTED TO THIS AREA
-40
0
40

Technical Appendix F

Hydrology Map
Proposed Condition


Project Boundary
Drainage Divide
Storm Drain
Flowpath
Subarea Number
Subarea Acreage
Node Number
0000
0.00
0000
1100
0.43
1101
1110
0.87
1112
1111
1050
0.59
1052
1051
1090
0.42
1091
1120
0.43
1070
0.31
1071
1080
0.61
1082
1123
1122
1121
2000
2001
0.22
1092
1081
1042
1041
1040
0.49
1030
0.14
1031
1060
0.46
1061
1062
1072
1073
1012
1001
1000
0.01
1010
0.35
1011
1020
0.14
1021
3000
0.27
3001
-40
0
40